CHANCELLOR'S OFFICE COPY

2007-2009 Catalog

UNC CHARLOTTE

Correspondence Directory

If, after reading this *Catalog*, you have further questions or specific inquiries about the programs of, or admission to, The University of North Carolina at Charlotte, please look below to find the proper office to contact. Address correspondence to any of the offices in care of:

The University of North Carolina at Charlotte
Attn: *Department or College*
9201 University City Boulevard
Charlotte, NC 28223-0001

INFORMATION
Campus Operator/Switchboard 704-687-2000

Academic Affairs 704-687-2224
Academic Advising *(refer to College or Academic Services)*
Academic Services 704-687-2338
Admissions
- Undergraduate 704-687-2213
- Graduate 704-687-3366
- International 704-687-3366
- Summer Programs 704-687-2099

Bookstore 704-687-4584
Colleges
- Architecture 704-687-4841
- Arts and Sciences 704-687-4303
- Business 704-687-2165
- Computing and Informatics .. 704-687-8565 or 8658
- Education 704-687-8722
- Engineering 704-687-8244
- Health and Human Services 704-687-4690
- Graduate School 704-687-3366

Cone University Center 704-687-2267
Continuing Education 704-687-8900
Counseling Center 704-687-2105
Dean of Students 704-687-2375
Dining Services 704-687-2020
Disability Services 704-687-4355
Financial Aid 704-687-2461
Health Services 704-687-4617
Honors College 704-687-4824
Housing and Residence Life 704-687-2585
International Programs 704-687-7755
J. Murrey Atkins Library
- Information Desk 704-687-2030
- Circulation 704-687-2392
- Reference 704-687-2241

Parking 704-687-4285
Records and Registration 704-687-3487
Student Accounts 704-687-2215
Student Activities 704-687-2521
Transcripts 704-687-1462

EMERGENCY NUMBERS
Campus Police -- Emergency ... 704-687-2200 or 911
Director of Public Safety and Non-Emergency Calls 704-687-8458
Inclement Weather Hotline 704-687-2877

Acknowledgements

This Catalog was prepared and published by the Office of Academic Affairs in May 2007. Its goal is to provide a comprehensive, accurate, and useful catalog, which fully describes the academic programs, policies, regulations, and requirements of the University.

Although the publisher of this Catalog has made every reasonable effort to attain factual accuracy herein, no responsibility is assumed for editorial, clerical or printing errors, or errors occasioned by mistakes. The publisher has attempted to present information that, at the time of preparation for printing, most accurately describes the course offerings, faculty listings, policies, procedures, regulations, and requirements of the University. However, it does not establish contractual relations. The University reserves the right to alter or change any statement contained herein without prior notice.

We request that omissions and inaccuracies be brought to the attention of the Editor, as well as any suggestions and comments on the presentation.

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Editing, Web Catalog, and CD Design & Development
Eric A. Klee, Publications Specialist
eklee@uncc.edu

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UNCCHARLOTTE

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

2007-2009 UNDERGRADUATE CATALOG
VOL. XXXI

www.provost.uncc.edu/catalogs

The University of North Carolina at Charlotte is committed to equality of educational opportunity and does not discriminate against applicants, students, or employees based on race, color, national origin, religion, sex, sexual orientation, age, or disability. In keeping with this commitment, UNC Charlotte actively seeks to promote diversity in its educational environment through its recruitment, enrollment, and hiring practices.

UNC CHARLOTTE ♦ 9201 UNIVERSITY CITY BOULEVARD ♦ CHARLOTTE, NC 28223
www.uncc.edu

Dear Students,

Thank you for choosing The University of North Carolina at Charlotte.

Our goal is to provide you with an education that will last a lifetime. Whether you are enrolled at UNC Charlotte to pursue your undergraduate or graduate degree, we want you to get the most out of your experience here. I hope that you will be able to take full advantage of the expertise of our faculty, the support of our staff, and the range of services that are available to help you meet your personal and career goals.

Besides a quality education, there's a lot to be excited about on campus. In addition to the student activities, clubs, and recreational opportunities with which you can become involved, we have many new state-of-the-art buildings and classrooms. And, over the next couple of years, you will see the largest project ever constructed at UNC Charlotte rise out of the ground—the new $65 million Student Union. All of us are looking forward to the opening of this great new place for socializing, dining, shopping, movies, and special events.

You've picked a great time to join the University. Welcome!

Cordially,

Philip L. Dubois

Philip L. Dubois
Chancellor

If this is your first year at UNC Charlotte, we welcome to our great campus. If you are returning, we are pleased to welcome you back.

Our University is constantly changing, and you are a part of that change. The reputation of any great school is based in large part on the success of its students, and we are dedicated to supporting yours. Our distinguished faculty are here to provide you with a quality education that will open doors for you. If we do our job right, your education will be intellectually challenging for you. If you do your job right, these years at UNC Charlotte will lay the groundwork for an exciting and satisfying future.

Remember, too, that there is more to the collegiate experience than coursework. I encourage you to become involved in some of the many activities or student organizations that are available to you. There, you will build friendships and relationships with both your fellow students and our faculty that you will take with you and cherish as you move on through the years.

We are pleased that you have chosen UNC Charlotte. As we continue to grow, we look forward to your continuing to grow with us as a person, scholar, and future alumnus/alumna.

Sincerely,

Joan F. Lorden

Joan F. Lorden
Provost and Vice Chancellor for Academic Affairs

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE 1946

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Academic Calendar
2007-2009

Please note: Dates pertaining to changes in enrollment and refunds are included in the Academic Calendar put forth by the Office of the Registrar (Records and Registration) and is available online each semester at www.registrar.uncc.edu/calendars/calendar.asp.

	2007-08	2008-09
FALL SEMESTER		
Academic Year Begins	Aug 13	Aug 15
First Day of Classes	Aug 20	Aug 25
No Saturday Classes	Sept 1	Aug 30
Labor Day - University closed	Sept 3	Sept 1
Student Recess - no classes	Oct 8-9	Oct 13-14
Thanksgiving - no classes	Nov 21-24	Nov 26-29
University closed	Nov 22-23	Nov 27-28
Last Class Day	Dec 5	Dec 9
Reading Day	Dec 6	Dec 10
Final Examinations*	Dec 7-8, 10-14	Dec 11-13, 15-18
Commencement	Dec 15	Dec 20
SPRING SEMESTER		
First Day of Classes	Jan 9	Jan 12
M.L. King Day - University closed	Jan 21	Jan 19
Student Recess - no classes	Mar 3-8	Mar 9-14
Spring Weekend - no classes	Mar 21-22	Apr 10-11
Last Class Day	Apr 29	Apr 28
Reading Day	Apr 30	Apr 29
Final Examinations*	May 1-2, 5-8	Apr 30, May 1, 4-7
Saturday Classes Final Exams	May 3	May 2
Ceremony Day	May 9	May 8
Commencement	May 10	May 9
Academic Year Ends	May 12	May 14
FIRST SUMMER TERM		
Class Days Including Exams	May 27-Jul 2	May 26-July 1
Memorial Day – no classes	May 26	May 25
SECOND SUMMER TERM		
Class Days Including Exams	July 7-Aug 12	July 6-Aug 11
Fourth of July - University closed	July 4	July 3
EXTENDED SUMMER TERM		
Class Days Including Exams	May 27-Aug 12	May 26-Aug 11
Fourth of July - University closed	July 4	July 3

** Common Examinations held on the first day of exams.*

Degree Programs

Subject Area	Degree(s)	Minor	Teacher Licensure	Concentrations
Accounting	BS			
Actuarial Mathematics		✓		
African-American Literature		✓		
Africana Studies	BA	✓		
American Studies		✓		
Anthropology	BA	✓		Applied Anthropology
Architecture	BA/BARCH			
Art	BA	✓	✓	Studio; Art History; Art Education
Art	BFA	✓	✓	Drawing; Painting; Printmaking; Ceramics; Fibers; Graphic Design; Illustration; Sculpture; Time Arts
Art History	BA	✓		
Athletic Training	BS			
Biology	BA	✓	✓	Medical Technology
Biology	BS			Cell Biology; Physiology; Ecology/ Environmental Biology; Microbiology

SUBJECT AREA	DEGREE(S)	MINOR	TEACHER LICENSURE	CONCENTRATIONS
Biotechnology		✓		
Business Administration *See: Finance, Industrial and Operations Management, International Business, Management, Management Information Systems, Marketing*	BSBA			
Chemistry	BA	✓	✓	Medical Technology
Chemistry	BS	✓		Biochemistry
Child and Family Development	BA	✓	Birth-Kindergarten Teacher Licensure	
Children's Literature		✓		
Civil Engineering	BSCE			
Civil Engineering Technology	BSET			
Cognitive Science		✓		
Communication Studies	BA	✓		Health Communication; Mass Media; Organizational Communication; Communications and Public Advocacy; Public Relations
Computer Engineering	BSCpE			
Computer Science	BA	✓		
Computer Science	BS	✓		Computer Engineering
Construction Management	BSCM			
Criminal Justice	BA	✓		
Dance	BA	✓	✓	
Earth Sciences	BA	✓	✓	
Earth Sciences	BS	✓		Environmental Geology; Atmospheric Science Hydrology; Environmental Information Systems; Hydrology; Surficial Materials

SUBJECT AREA	DEGREE(S)	MINOR	TEACHER LICENSURE	CONCENTRATIONS
Economics	BS	✓		Business Administration; Liberal Arts
Education *See: Elementary Education, Middle Grades, Special Education*			✓	
Electrical Engineering	BSEE			
Electrical Engineering Technology	BSET			
Elementary Education	BA		✓	English & Communications; Global Studies & Foreign Languages; Mathematics; Science; Social Studies; Visual & Performing Arts
Engineering *See: Civil Engineering, Computer Engineering, Electrical Engineering, Mechanical Engineering*				
Engineering Technology *See: Civil Engineering Technology, Electrical Engineering Technology, Fire Safety Engineering Technology, Mechanical Engineering Technology*	BSET			
English	BA	✓	✓	
Exercise Science	BS			
Film Studies		✓		
Finance	BSBA			Risk Management and Insurance; Finance
Fire Safety Engineering Technology	BSET			
French	BA	✓	✓	
Geography	BS, BA	✓		Economic Geography; Geographic Information Systems; Community & Regional Planning
Geology	BS	✓		
German	BA	✓	✓	
Gerontology		✓		

SUBJECT AREA	DEGREE(S)	MINOR	TEACHER LICENSURE	CONCENTRATIONS
History	BA	✓	✓	
Industrial and Operations Management	BSBA	✓		
Information Science		✓		
Interdisciplinary Health Studies		✓		
International Business	BSBA			
International Studies	BA	✓		African Studies; Asian Studies; Comparative Studies; European Studies; Latin American Studies
Islamic Studies		✓		
Japanese		✓		
Journalism		✓		
Judaic Studies		✓		
Latin American Studies	BA	✓		
Management *(see also Construction Management)*	BSBA			Managerial Leadership; Human Resources Management; Entrepreneurship
Management Information Systems	BSBA	✓		
Marketing	BSBA			
Mathematics	BA	✓	✓	Actuarial Science; Statistics
Mathematics	BS		✓	
Mathematics for Business	BA, BS			Economics/Finance; Actuarial Science; Operations Research
Mechanical Engineering	BSME			Motorsports Engineering
Mechanical Engineering Technology	BSET			
Meteorology	BS			
Middle Grades Education	BA		✓	English Language Arts; Mathematics; Science; Social Studies
Music	BA	✓		

SUBJECT AREA	DEGREE(S)	MINOR	TEACHER LICENSURE	CONCENTRATIONS
Music Education	BM		✓	Instrumental; Vocal; General Music
Music Performance	BM			
Nursing	BSN			
Philosophy	BA	✓		Traditional; Applied Philosophy
Physics	BA	✓	✓	
Physics	BS			Astrophysics, Optical Science & Engineering
Political Science	BA	✓		Comparative & International Politics; Public Policy
Psychology	BS, BA	✓		
Public Health	BS			
Religious Studies	BA	✓		
ROTC Air Force (Aerospace Studies) Army (Military Science)				
Russian		✓		
Social Work	BSW	✓		
Sociology	BA	✓		
Software and Information Systems	BA	✓		Information Technology
Spanish	BA	✓	✓	
Special Education	BA		✓	Adapted Curriculum; General Curriculum
Technical and Professional Writing		✓		
Theatre	BA	✓	✓	
Urban Studies		✓		
Western Antiquity & Classical Languages		✓		
Women's Studies		✓		

The University

www.northcarolina.edu
www.uncc.edu

The UNIVERSITY of NORTH CAROLINA
A 16-campus university

In North Carolina, all the public educational institutions that grant baccalaureate degrees are part of the University of North Carolina. The University of North Carolina is comprised of the 16 constituent institutions which form the multi-campus state university.

The University of North Carolina, chartered by the N.C. General Assembly in 1789, was the first public university in the United States to open its doors and the only one to graduate students in the eighteenth century. The first class was admitted in Chapel Hill in 1795. For the next 136 years, the only campus of the University of North Carolina was at Chapel Hill.

In 1877, the N.C. General Assembly began sponsoring additional institutions of higher education, diverse in origin and purpose. Five were historically black institutions, and another was founded to educate American Indians. Several were created to prepare teachers for the public schools. Others were established with a technological emphasis, and one as a training school for performing artists.

In 1931, the N.C. General Assembly redefined the University of North Carolina to include three state-supported institutions: The Campus at Chapel Hill (now the University of North Carolina at Chapel Hill), North Carolina State College (now North Carolina State University at Raleigh), and Woman's College (now the University of North Carolina at Greensboro). The new multi-campus University operated with one board of trustees and one president. By 1969, three additional campuses had joined the University through legislative action: the University of North Carolina at Charlotte, the University of North Carolina at Asheville, and the University of North Carolina at Wilmington.

In 1971, the General Assembly passed legislation bringing into the University of North Carolina the state's ten remaining public senior institutions, each of which had until then been legally separate: Appalachian State University, East Carolina University, Elizabeth City State University, Fayetteville State University, North Carolina Agricultural and Technical State University, North Carolina Central University, the North Carolina School of the Arts, Pembroke State University, Western Carolina University, and Winston-Salem State University. This action created the current 16-campus University. (In 1985, the North Carolina School of Science and Mathematics, a residential high school for gifted students, was declared an affiliated school of the University.)

The UNC Board of Governors is the policy-making body legally charged with "the general determination, control, supervision, management, and governance of all affairs of the constituent institutions." It elects the president, who administers the University. The 32 voting members of the Board of Governors are elected by the General Assembly for four-year terms. Former board chairmen and board members who are former governors of North Carolina may continue to serve limited periods as non-voting members emeriti. The president of the UNC Association of Student Governments, or that student's designee, is also a non-voting member.

Each of the 16 constituent institutions is headed by a chancellor, who is chosen by the Board of Governors on the president's nomination and is responsible to the president. Each institution has a board of trustees, consisting of eight members elected by the Board of Governors, four appointed by the governor, and the president of the Student Government Association, who serves ex-officio. (The NC School of the Arts has two additional ex-officio members.) Each board of trustees holds extensive powers over academic and other operations of its institution on delegation from the Board of Governors.

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

UNC Charlotte was founded in 1946 and created a hunger for education in what was one of the Carolinas' most under-colleged communities. Charlotte had sought a public university since 1771 but was never able to sustain one. For years, the nearest state-supported university was 90 miles away. When veterans of World War II returned home seeking to resume their education, the city and state established a college center in a downtown high school, which first opened its doors on September 23, 1946, to 278 freshmen and sophomores. Three years later, Charlotte citizens and an inspired math teacher by the name of Bonnie Cone made the center Charlotte College, which offered a junior college curriculum. Enrollment grew and, by 1961, the college was moved to new buildings on a 1,000-acre campus off NC Highway 49. In 1964, Charlotte College was made a senior college, and in 1965, it became the fourth campus of The University of North Carolina. In 1969, the University began offering programs leading to Master's degrees. In 1992, it was authorized to offer programs leading to doctoral degrees.

Today, UNC Charlotte aspires to be North Carolina's most energetic and responsive university, offering unparalleled educational opportunities for nearly 25,000 students seeking the highest quality undergraduate, graduate, and continuing personal or professional enrichment in the liberal arts and sciences and selected professions. The goal of UNC Charlotte is to be a publicly supported Doctoral/Research University – Extensive in North Carolina early in the 21st Century. UNC Charlotte will be known especially for the individual commitment of each member of its collegial and diverse faculty and staff to extending educational opportunity and ensuring student learning and success, both at the graduate and undergraduate levels; its nationally and internationally recognized capacity for research and scholarship; and its willingness to join its resources in collaboration with those of other institutions to address the major educational, economic, social, and cultural needs of the greater Charlotte region. UNC Charlotte has a special responsibility to build the intellectual capital of this region. In order to meet the growing need for higher education in the Charlotte region and in the state, the University continues to expand degree programs and continuing education non-degree offerings.

The University is committed to excellence through informed and effective teaching in all academic programs and emphasizes undergraduate instruction as the foundation of life-long learning and advanced formal education. The students selected for admission have demonstrated a willingness to learn, a capacity to benefit from a broad array of intellectual resources, and the potential to participate in the opportunities offered by the changing global society. University programs are open to all qualified students without regard to race, color, national origin, gender, age, religious belief, sexual orientation, or disability. Participation by students from other states and nations is welcomed.

The size and distinction of our research programs reflects the nationally competitive faculty. Recruited from across the world, they engage in both basic and applied research. Scholarly inquiry informs graduate and undergraduate instruction, and takes advantage of the University's location in a diverse and dynamic metropolitan region.

The campus environment encourages the active involvement of students in their personal and intellectual development, including opportunities to learn leadership potential skills. The policies and practices of the University are designed to graduate students with the breadth and depth of knowledge and the intellectual and professional skills that prepare them for a productive life in an ever-changing world. Through the University experience, students will:

- Develop strong ties and commitment to the University and its mission and vision
- Gain a realistic understanding of their personal potential
- Further their commitment to responsible citizenship and leadership
- Develop fundamental skills of inquiry in writing, mathematical and logical reasoning, information literacy and technology, and the sciences
- Gain an understanding and appreciation of the themes of liberal education for private and public life in the areas of arts and society, the western tradition, global understanding, and ethical issues and cultural critique
- Develop oral and written communication skills
- Develop the ability to engage in reasoned debate about pressing moral concerns and to resolve them in an ethically sound and responsible manner

INSTITUTIONAL MISSION STATEMENT

Approved by the University's Board of Trustees, 2002

UNC Charlotte is the only Doctoral/Research University – Intensive in the Charlotte region, fully engaged in the discovery, dissemination, synthesis, and application of knowledge. It provides for the educational, economic, social, and cultural advancement of the people of North Carolina through

on- and off-campus programs, continuing personal and professional education opportunities, research, and collaborative relationships with private, public, and nonprofit institutions. UNC Charlotte has a special responsibility to build the intellectual capital of this area. As such it serves the research and doctoral education needs of the greater Charlotte metropolitan region.

The primary commitment of UNC Charlotte is to extend educational opportunities and to ensure success for qualified students of diverse backgrounds through informed and effective teaching in the liberal arts and sciences and in selected professional programs offered through Colleges of Architecture, Arts and Sciences, Business, Computing and Informatics, Education, Engineering, and Health and Human Services, and through programs and services designed to support students' intellectual and personal development. The University offers an extensive array of baccalaureate and master's programs and a number of doctoral programs.

With a broad institutional commitment to liberal education as the foundation for constructive citizenship, professional practice, and lifelong learning, UNC Charlotte is prepared to focus interdisciplinary resources to address seven broad areas of concern to the Charlotte region: 1) Liberal Education; 2) Business and Finance; 3) Urban and Regional Development; 4) Children, Families, and Schools; 5) Health Care and Health Policy; 6) International Understanding and Involvement; and 7) Applied Sciences and Technologies.

ACADEMIC STRUCTURE

UNC Charlotte is organized into five administrative divisions: Academic Affairs, Business Affairs, Development and Alumni Affairs, Student Affairs, and University Relations and Community Affairs.

The Division of Academic Affairs includes Academic Services; Enrollment Management; Graduate Programs; the Library; Information and Technology Services; Metropolitan Studies and Extended Academic Programs; International Programs; Research; the Charlotte Research Institute; and seven colleges: the Colleges of Architecture, Arts & Sciences, Business, Computing & Informatics, Education, Engineering, and Health & Human Services. The colleges offer 89 bachelors, 62 master's, and 18 doctoral degree programs. In addition, The Honors College offers several distinct programs for academically talented students. Many of the departments throughout the University are involved in teacher education. The College of Education, advised by the University Teacher Education Committee, is responsible for these programs.

The Division of Business Affairs includes Business Continuity Planning, Business Services, Facilities Management, Financial Services, Human Resources, Police and Public Safety, and Systems Development.

The Division of Development and Alumni Affairs includes the Office of Alumni Affairs and the Office of University Development. Today, UNC Charlotte boasts more than 75,000 living alumni and adds 4,000 to 4,500 new alumni each year.

The Division of Student Affairs includes departments and services which assist students through every aspect of their education, as well as providing social opportunities. Included are offices and services such as the Counseling Center, Dean of Students, Housing and Residence Life, Intramural and Recreational Services, Student Activities, and the Student Health Center.

The Division of University Relations and Community Affairs includes the Office of Public Relations and Marketing, which serve as UNC Charlotte's primary contact with members of the news media and external audiences. It is responsible for communicating information that promotes the people, programs, news and events of UNC Charlotte. The office is also responsible for implementing an integrated communications and marketing plan for the University.

EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION

The University of North Carolina at Charlotte recognizes a moral, economic, and legal responsibility to ensure equal employment opportunity for all persons, regardless of race, color, religion, gender (except when gender is a bona fide occupational qualification), sexual orientation, age, national origin, physical or mental disability (except when making accommodations for physical or mental disabilities would impose undue hardship on the conduct of University business), or veteran status. This policy is a fundamental necessity for the continued growth and development of this University. Nondiscriminatory consideration shall be afforded applicants and employees in all employment actions including recruiting, hiring, training, promotion, placement, transfer, layoff, leave of absence, and termination. All personnel actions pertaining to either academic or nonacademic positions to include such matters as compensation, benefits, transfers, layoffs, return from layoffs, University-sponsored training, education, tuition assistance, and social and recreational programs shall be administered according to the same principles of equal opportunity. Promotion and advancement decisions shall be made in accordance with the principles of equal opportunity, and the University shall, as a general policy, attempt to fill existing position vacancies from qualified persons

already employed by the University. Outside applicants may be considered concurrently at the discretion of the selecting official. The University has established reporting and monitoring systems to ensure adherence to this policy of nondiscrimination.

Affirmative Action. Our philosophy concerning equal employment opportunity is affirmed and promoted in the University's Affirmative Action Plan. To facilitate UNC Charlotte's affirmative action efforts on behalf of disabled workers, veterans (including veterans of the Vietnam Era), individuals who qualify and wish to benefit from the Affirmative Action Plan are invited and encouraged to identify themselves. This information is provided voluntarily, and refusal of employees to identify themselves as veterans or disabled persons will not subject them to discharge or disciplinary action. Unless otherwise required by law, the information obtained will be kept confidential in the manner required by law, except that supervisors and managers may be informed about restrictions on the work or duties of disabled persons and about necessary accommodations.

Discriminatory Personal Conduct. The University seeks to promote a fair, humane, and respectful environment for its faculty, staff, and students. To that end, University policy explicitly prohibits sexual harassment, racial harassment, and all other personal conduct which inappropriately asserts that sex, race, color, ethnicity, sexual orientation, religion, veteran status, disability, age, or ancestry are relevant to consideration of individual worth or individual performance. The same policies provide procedures for the informal or formal resolution of instances where such behavior is suspected or alleged. The policies have received wide distribution and are available for inspection in all administrative offices on campus as well as online at www.legal.uncc.edu/policies/nondiscrim.html

ACCREDITATION

UNC Charlotte is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (www.sacscoc.org; 1866 Southern Lane, Decatur, Georgia, 30033-4097; telephone number 404-679-4501) to award baccalaureate, master's, intermediate, and doctoral degrees.

The Bachelor of Architecture and Master of Architecture "first professional degree" programs are accredited by the National Architectural Accrediting Board (NAAB). The Department of Chemistry is on the approval list of the American Chemical Society. The Master of Public Administration program is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA). The Bachelor of Social Work and Master of Social Work programs are accredited by the Council on Social Work Education (CSWE). The programs in business and accounting are accredited by AACSB International - The Association to Advance Collegiate Schools of Business. The University's professional education programs for BK-12 teachers, counselors, and administrators are approved by the North Carolina Department of Public Instruction (NCDPI) and accredited by the National Council for Accreditation of Teacher Education (NCATE). The School Counseling and Agency (Community) Counseling programs in Counselor Education are accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP). The civil, computer, electrical, and mechanical engineering programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology; and the civil, electrical, and mechanical engineering technology programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: (410) 347-7700. The Nursing programs are accredited by the Commission on Collegiate Nursing Education (CCNE) and the BSN program is approved by the North Carolina Board of Nursing. The Nursing Anesthesia program is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs (CANAEP). The Bachelor of Athletic Training program is accredited by the Commission on the Accreditation of Athletic Training Education (CAATE) through October 2009. Both the Bachelor of Science in Exercise Science program and the Master of Science in Clinical Exercise Physiology are actively pursuing accreditation by the Committee on Accreditation for the Exercise Sciences (CoAES) and Commission of Allied Health Education Programs (CAAHEP). The Master of Health Administration Program is in candidacy for accreditation by the Commission on Accreditation of Healthcare Management Education (CAHME). The Master of Science in Public Health program has applied for accreditation by the Council on Education for Public Health.

The University is a member of the Council of Graduate Schools, the Conference of Southern Graduate Schools, and The North Carolina Association of Colleges and Universities.

THE CAMPUS

The University of North Carolina at Charlotte is the largest institution of higher education in the Charlotte region and is a genuine urban university. The main campus is in University City, one of the fastest growing areas of the Charlotte region, located off WT Harris Boulevard on NC 49 near its intersection with US 29, and only eight miles from the interchange of Interstates 85 and

77. Campus facilities are comprised of contemporary buildings, including many new ones constructed in the past ten years and more on the way. In addition to classrooms and well-equipped laboratories, the University offers arts and athletic facilities, cafeterias, and residence accommodations. The campus is designed for the pedestrian, and facilities are generally accessible to students with disabilities.

UNC Charlotte Uptown. The University also has a substantial presence uptown, as it offers select upper-division undergraduate and graduate courses and a variety of continuing personal and professional development programs at its UNC Charlotte Uptown location. Classes are scheduled for the convenience of persons employed in or living near the central business core of the city. UNC Charlotte Uptown is located at 220 North Tryon Street, on the third floor of the Mint Museum of Craft + Design. Additionally, UNC Charlotte has a major presence in South End at its Charlotte Community Design Studio.

Looking forward, the University plans to build a major new Center City classroom building in Uptown Charlotte on the corner of Brevard and Ninth streets. Five stories high, the facility will have about 100,000 net square feet for classrooms, lectures halls, computer labs and offices. Classes offered in the new building will range from business and social services to architecture and the humanities. This will be the first urban construction project of any university within the 16-constituent UNC system.

THE 49ERS

The nickname, the 49ers, was chosen in recognition of the importance of the year 1949 in the history of the University. UNC Charlotte, which began as an off-campus center of the University of North Carolina at Chapel Hill, would have died in 1949 had Bonnie Cone and her supporters not convinced the N.C. Legislature that Charlotte needed a permanent college. Charlotte College was established that year. Additionally, the campus is also location on N.C. Highway 49 and Charlotte has a rich gold mining history -- the term "49ers" symbolizes gold mining. A bronze statue of the 49ers Gold Miner sits in front of the Reese Administration building on campus. The statue recalls the region's history as a gold mining center and symbolizes the pioneering spirit and determination that has led to UNC Charlotte's dramatic growth.

UNIVERSITY LOGO

UNC Charlotte's logo has become one of the Charlotte region's most distinctive insignia. It symbolizes the University's link to the UNC system, to the Charlotte metropolitan region, and to the discipline of learning. The logo is suggestive of a "crown," reminiscent of Queen Charlotte of England, for whom the city of Charlotte is named. The "crown" can also be interpreted as a lamp of learning, a burning brush, an open book, the flowering of a plant or an individual, or a graduate in cap and gown.

ALMA MATER

UNC Charlotte's Alma Mater has deep roots in the institution's history. It was part of an "Academic Festival March" composed for UNC Charlotte by James Helme Sutcliffe, a Charlotte composer and music critic who lived in Germany at the time. Dr. Loy Witherspoon, professor of religious studies, commissioned the March in 1965 when he learned that Charlotte College would become a campus of The University of North Carolina. The March was first performed in 1967 at the installation of Dean W. Colvard as UNC Charlotte's first chancellor. Afterwards, it was performed as a recessional at every Commencement during Dean W. Colvard's tenure as chancellor. When UNC Charlotte founder Bonnie Cone heard the March, she said, "I can hear an alma matter in it," referring to a hymn-like refrain. Dr. Robert Rieke, a professor of history, also heard an alma matter in it.

On a 1990 trip to Germany, Rieke visited Sutcliffe, picked up a recording of the March, and began writing words to fit the final refrain. On Christmas Eve 1991, he sent Bonnie Cone the words and music as a Christmas present to her and to the University, from which he had retired a year earlier. Chancellor James H. Woodward approved the composition as the University's Alma Mater in April 1992. It was sung for the first time at the following May Commencement and has been performed at every Commencement since.

Admission to the University

www.admissions.uncc.edu

The University considers applications for admission without regard to race, color, national origin, religion, sex, sexual orientation, age, or disability. It reserves the right to withhold the admission of applicants who fail to meet any of the requirements for admission and to restrict enrollments as required by budgetary or other constraints.

The **Division of Enrollment Management** actively identifies, counsels, recruits, and enrolls a qualified and diverse population of undergraduate students and offers services that promote student retention and success. The Offices of Undergraduate Admissions, Student Financial Aid, University Registrar, Adult Students and Evening Services and Enrollment Technologies report to the Associate Provost for Enrollment Management. These offices, in collaboration with faculty and staff in other administrative units, work to provide a seamless transition from admission to enrollment to graduation and beyond.

The Enrollment Management units interface with most campus entities, particularly the faculty, Academic Affairs, Student Affairs, Alumni Affairs, Academic Services, and Business Affairs. Additionally, these offices work regularly with external entities such as high schools, community colleges, government agencies, community groups, and relevant professional organizations. Visit the Enrollment Management website at http://enrollment.uncc.edu for more information.

Admissions Process. Applications for admission are reviewed when all required credentials are received. The review focuses on the academic history of the applicant and considers all relevant factors. The intent of the University is to offer admission to applicants whose credentials indicate a strong likelihood for success in their selected curricula. It is not always possible to accommodate all the applicants who meet the minimum criteria, and some programs select the best qualified from those meeting the minimum requirements. The Admissions Advisory Committee may make exceptions to the minimum criteria for applicants who are judged to have potential or talent not revealed by test scores and academic performance. Notification of the admissions decision is mailed as soon as the decision is made. For programs that have a special admissions process, such as Architecture and Nursing, notification will be later than for other programs.

Students planning to live on campus should complete the online housing form at www.housing.uncc.edu after they receive confirmation of their acceptance in the mail. Early application guarantees early confirmation of housing and enhances the possibility of assignment, if requested, to one of the special lifestyles housing units which are available on a limited basis.

Information about undergraduate programs is available from:

Office of Undergraduate Admissions
Cato Hall
University of North Carolina at Charlotte
9201 University City Boulevard
Charlotte, North Carolina 28223-0001
Telephone: (704) 687-2213
Fax: (704) 687-6483
E-mail: unccadm@uncc.edu
Web: www.admissions.uncc.edu

International students should contact the Office of **International Admissions** by telephone at (704) 687-3366, by fax at (704) 687-3279, or by email at intnladm@uncc.edu. International Admissions is responsible for marketing UNC Charlotte to the world. The primary focus is the admission of students on non-immigrant visas. IA processes applications, evaluates credentials, makes admissions decisions, and serves as

consultant to prospective students, academic advisors, sponsors, and agencies representing international students, departments, and the Graduate School. When students are admitted, IA provides documentation to the International Student/Scholar Office for Immigration purposes. Application forms and additional information are available online at www.uncc.edu/intradmn.

WHEN TO APPLY

Applicants are advised to file their applications for admission well in advance of the schedule below which is based on the amount of time generally required to process an application and inform the applicant of the admission decision. **Early application is generally advantageous and particularly for programs with limits on the number of new students that can be accepted.**

Applications Completed By:	Applicants Notified of Decision By:
October 15	December 15
December 1	March 1
February 15	April 1
March 30	April 30

Students whose applications are completed after the March 30 date will be considered on a space available basis.

Deadlines for **international students** are earlier. Contact the Office of International Admissions for further details.

The University may alter the dates for acceptance of applications without further notice in accordance with available resources and the enrollment limitation established by the North Carolina General Assembly.

THE APPLICATION

The applicant is responsible for supplying all required credentials. Nondisclosure of an applicant's complete academic history will result in rejection of the application and immediate dismissal from the University.

For Freshman Admission, the application includes:

1) A completed online *Application for Undergraduate Admission* form.
2) Application fee of $50 (nonrefundable and nondeductible).
3) Official high school transcript showing rank in class, GPA computed on a 4.0 scale, and senior courses in progress. (A high school equivalency certificate or G.E.D. may be submitted in lieu of a high school diploma.)
4) Official Scholastic Assessment Test (SAT) and/or American College Testing Program (ACT) scores.
5) Additional credentials, specified below, for international applications.

For Transfer Admission, the application includes:

1) A completed online *Application for Undergraduate Admission* form.
2) Application fee of $50 (nonrefundable and nondeductible).
3) Official high school transcript. (This may be waived for applicants who present the A.A., A.S., or A.F.A. degree.)
4) Two official transcripts from every college attended, including summer sessions.
5) Additional credentials, specified below, for international applications.

For Admission of International Applicants, the application also includes:

1) Official scores on the Test of English as a Foreign Language (TOEFL) or the Michigan English Language Assessment Battery (MELAB), if the applicant is from a non-English speaking country. Required is either a minimum score of 180 on the new computer based TOEFL or a minimum score of 75% on the MELAB.
2) A Statement of Financial Responsibility showing the applicant's financial resources while in the United States.

ADMISSION REQUIREMENTS

Freshman Admission Requirements. Candidates for admission to freshman standing, including transfer applicants who present fewer than 24 hours of transferred credit, must:

1) Submit a completed application for admission.
2) Have graduated from an approved or accredited high school or have earned a high school equivalency certificate or G.E.D.
3) Present the following **High School Course Units**: 4 units in *English*, emphasizing grammar, composition and literature; 4 units in *mathematics*, including Algebra I, Algebra II and geometry, and a higher level mathematics course for which Algebra II is a prerequisite; 2 units in *social studies*, including one unit in U.S. history; and 3 units in *science*, including at least one unit in a life or biological science (e.g., biology), at least one unit in a physical science (e.g., chemistry, physics, physical science), and at least one laboratory course; and 2 units of the same *foreign language*. It is *recommended* that the candidate for admission also complete a third unit of the same foreign language. Seniors should select a challenging academic schedule that includes English, math, science, social studies (history), and a foreign language. (Course units as defined in these requirements may include high school level courses taken and passed after graduating from high school as well as those taken while enrolled as a high school student.)
4) Present a satisfactory combination of high school grades and SAT or ACT scores.
5) Present all college-level work completed in high school by submitting two official copies from any college or university attended.

6) Request official Advanced Placement (AP) test results to be sent directly to the Office of Undergraduate Admissions (Code 5105) if advanced placement course credit is to be considered for addition to the UNC Charlotte transcript.
7) Satisfy any additional requirements for acceptance into their chosen major (if any). For more information concerning selective major requirements, please consult the Admissions website at www.admissions.uncc.edu.
8) Present verification of specific immunizations required by North Carolina state law described later in this section of the *Catalog*. An *Immunizations Form* is available to download online at www.studenthealth.uncc.edu.

Transfer Admission Requirements. Candidates for admission as transfer students must:

1) Submit a completed application for admission.
2) Satisfy the requirements for freshman admission if they do not present at least 24 hours of transferred credit accepted by UNC Charlotte.
3) Present the High School Course Units (required of all students under the age of 24) specified in the Freshman Admission Requirements. Transfer applicants who did not complete the required course units in high school may earn an Associate in Arts, Associate in Science, or Associate in Fine Arts degree OR complete six semester hours (or 9 quarter hours) that are transferable to UNC Charlotte in each of the following subject areas: Mathematics, English, social science, and natural science. Students who graduated from high school in June 2004 and beyond must have, in addition to the requirements above, an additional 6 semester hours of foreign language for a total of 30 semester hours of credit.
4) Present an academic average of at least *C* (a grade point average of at least 2.0 on a 4.0 scale) on all post-secondary courses attempted.
5) Be in good standing at the last college or university attended.
6) Satisfy any additional requirements for acceptance into their chosen major (if any). For more information concerning selective major requirements, please consult the Admissions website at www.admissions.uncc.edu.
7) Present verification of specific immunizations required by North Carolina state law described later in this section of the *Catalog*. An *Immunizations Form* is available to download online at www.studenthealth.uncc.edu.

ADDITIONAL REQUIREMENTS FOR ACCEPTANCE INTO SPECIFIED PROGRAMS

Accounting. *Freshman* admission is competitive. *Transfers* may be admitted to a pre-accounting major if they present at least a 2.5 GPA in college transferable coursework as calculated by UNC Charlotte Admissions. Students will work with the Belk College of Business to apply for an upper-division Accounting major.

Architecture. Applications for the fall semester are accepted through January 31 each year. *Freshmen and transfers* must present algebra, trigonometry, plane and solid geometry, or the equivalent in integrated courses from high school or college. A personal interview and letter of intent are also required.

Art. Any student seeking admission to the BA or BFA degree program, with or without K-12 Art Teacher Licensure, must present an art portfolio along with an admission application to the Department of Art and Art History. These submissions are accepted on an ongoing basis. Students unable to present a portfolio at the time of admission will be listed as a pre-art major. Application forms and instructions for preparation of the portfolio are available from the Office of Undergraduate Admissions or online at www.art.uncc.edu.

Business Administration (BSBA degree programs). *Freshman* admission is competitive. *Transfers* may be admitted to a pre-business major if they present at least a 2.5 GPA in college transferable coursework as calculated by UNC Charlotte Admissions. Students will work with the Belk College of Business to apply for an upper-division Business Administration major.

Computer Science. *Freshman* admission is competitive. *Transfers* must present an overall GPA of at least 2.5 with no grade less than *C* in computer science courses.

Economics. *Transfers* from other institutions must present a GPA of at least 2.5, as calculated by UNC Charlotte Admissions, to be admitted into a pre-economics major. Students will work with the Belk College of Business to apply for an upper-division Economics major.

Education. *Freshmen* interested in teacher education may be classified as Pre-Education students and should declare their interest to receive appropriate advising services. Admission to a Teacher Education program typically occurs at the end of the sophomore year and requires: (1) a GPA of at least 2.5 in courses taken and/or accepted on transfer by UNC Charlotte; (2) a grade of *C* or better in both EDUC 2100 and SPED 2100; and (3) test scores at or above North Carolina Department of Public Instruction (NCDPI) cut-score levels on Praxis I: Pre-Professional Skills Tests in Reading, Mathematics, and Writing. *Transfers* must meet the same requirements.

Engineering. *Freshman* admission is competitive. Based upon an overall evaluation of high school record with particular emphasis on advanced courses in math and science and test scores, freshmen may be admitted directly to an engineering major or to engineering undecided. *Transfers* must present a GPA of at least 2.5 and meet the same mathematics requirements as engineering freshmen using either high school or college mathematics courses. All transfers will be admitted to the lower division of a department, and evaluation of transfer credits to a program by the department chair will follow the guidelines of the North Carolina Engineering Transfer Board. Transfers from an ABET accredited engineering program who do not have a 2.5 GPA may be admitted upon the recommendation of the

chair of the major department.

Engineering Technology. *Freshmen* have to meet regular freshman admission requirements. *Transfers* who are not interested in the distance education program must meet regular transfer admission requirements. Transfers are only accepted into the distance education program with the following requirements: (1) an Associate in Applied Science degree, or its equivalent, in a field appropriate to the option they plan to enter; (2) an overall GPA of at least 2.2 on all courses taken toward the two-year degree (exceptions to this requirement will be considered on the basis of individual merit.); and (3) satisfactory completion of the prerequisite background courses for the option they plan to enter. Acceptance of the A.A.S. degree indicates the acceptance of up to 64 hours toward the Bachelor of Science in Engineering Technology degree only. These hours are not valid toward any other degree program at the University.

Music. An audition is required and will be scheduled by the Music Department after it is determined that the applicant is qualified for admission to the University.

Nursing. A revised curriculum in Nursing was implemented beginning with freshmen entering the University in Fall 2003. (This may also affect students that have entered the University before Fall 2003 and are planning to apply for upper-division admission after 2003). See the School of Nursing web site at www.health.uncc.edu/son for announcements and information regarding the revised curriculum. Applicants are admitted to the Nursing major at the upper-division or junior year only. *Freshmen* who meet University requirements may be admitted to Pre-Nursing. Acceptance into Pre-Nursing does not automatically qualify an applicant for acceptance into the upper-division Nursing major. *Transfers* who have an overall GPA of at least 2.5 but have not completed all prerequisites may be admitted into Pre-Nursing; however, this does not automatically qualify the applicant for acceptance into the upper-division Nursing major. Admission to the upper-division Nursing major is competitive and not all applicants can be accommodated. Only the best qualified applicants are accepted for the limited spaces available. Applications for the upper-division BSN major must be received in the Office of Undergraduate Admissions, including all supporting documentation and transcripts, by January 31 in order to be considered for admission into the fall semester and August 31 to be considered for the spring semester.

Transfer students who hold a current license as a registered nurse (RN) in North Carolina are eligible to apply for the RN/BSN completion program. Students who have an overall GPA of at least 2.5 but have not completed all prerequisites may be admitted into the Pre-RN/BSN program. Admission into the upper-division RN/BSN program is competitive. Applications for the upper-division RN/BSN program, along with all required transcripts, must be received in the Office of Undergraduate Admissions by March 15 to be considered for the fall semester and by September 15 to be considered for the spring semester.

ADMISSION FOR UNDERGRADUATE CERTIFICATE PROGRAMS

The University offers the following undergraduate certificates:

- Certificate in Business Languages
- Certificate in Translating
- Certificate in Computer Programming
- Certificate in Computer Architecture
- Professional Training Certificate in Dance
- Certificate in International Public Relations

Students who wish to apply for these certificate programs should consult the Office of Undergraduate Admissions web site at www.admissions.uncc.edu. If a student has already received a bachelor's degree, they must meet second baccalaureate degree admissions requirements. Students who have not received a bachelor's degree and have attended a college or university must meet transfer admissions requirements. Students with a high school diploma who have not attended a college or university must meet freshman requirements.

Please note: computer science undergraduate certificate programs have additional admissions requirements. In order for a student to be admitted to a computer science undergraduate certificate program, students must have earned a bachelor's degree in an academic field other than computer science. These students must also present at least one semester of a college level calculus course with a grade of *D* or above.

PLACEMENT/PROFICIENCY PROCEDURES

Placement and proficiency examinations are given to determine the appropriate courses for all new students to take in mathematics and foreign language and for non-native speakers of English to take in English.

Foreign Language Proficiency Procedures. There are no foreign language requirements associated with the General Education Program. Students are required to take foreign language only if it is a requirement of their college or major department. The College of Arts and Sciences, the College of Architecture, and the College of Health and Human Services all have a foreign language requirement.

All students within these colleges are required to demonstrate proficiency in a foreign language of their choice by completing coursework through at least the 1202 level. In order to meet this proficiency requirement, a student may: (1) complete the coursework at UNC Charlotte; (2) complete three years of the same language in high school through level three; (3) achieve a satisfactory score on the foreign language placement exam; (4) transfer in the equivalent courses from another institution; or (5) place out of or earn transfer or transient credit for 1201 and complete the 1202 course, or complete 1201 and place out of or earn transfer or transient credit for 1202. Additionally, students in the College of Arts & Sciences and College

of Health & Human Services may demonstrate proficiency by transferring in with an AA, AS,or AFA degree.

Although all students in the College of Arts & Sciences, College of Architecture, and College of Health & Human Services are subject to the 1202 proficiency requirement, students in select departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. Students should consult with their major department to determine whether or not they are required to complete the intermediate proficiency requirement.

Continuing students, who enrolled prior to fall 2003 and successfully completed three units of the same foreign language in high school, are exempt from taking the language proficiency test and are considered proficient in that language for General Education; however, certain majors require additional foreign language coursework. Students who do not present three units of the same foreign language in high school must comply with the policy below.

Freshmen and *transfers* **of all majors** who entered UNC Charlotte before fall 2003, are required to pass or place out of the 1102 or 1202 course level of a foreign language. Students who continue study of a language taken in high school must take a UNC Charlotte Foreign Language Placement Exam. These placement exams are offered in German, Italian, Latin, and Spanish during new student orientations and on a regular basis through the school year. Contact the Department of Languages and Culture Studies for additional information.

Mathematics Placement Procedures. *Freshmen* and *transfers* who have not completed all Mathematics courses required for their program of study must take a placement examination to determine the appropriate entry-level Mathematics course for them. *All students entering the College of Engineering must take this placement examination*. Contact the Department of Mathematics and Statistics for additional information.

English Placement Procedures for Non-Native Speakers of English. All undergraduate degree students who are non-native speakers of English are required to take the UNC Charlotte English 1100 Placement Test to determine whether or not they must enroll in ENGL 1100 along with ENGL 1101. The test must be taken at the beginning of their first semester at UNC Charlotte. Students who pass the English 1100 Placement Test do not have to register for ENGL 1100, but they must register for a specially designated section of ENGL 1101 for non-native speakers of English. Students who *do not* pass the Placement Test *must register for both* ENGL 1100 (which is taught as a support class for ENGL 1101) and a specially designated section of ENGL 1101 during the same semester. Contact the English Department or the Office of International Programs for additional information.

IMMUNIZATION REQUIREMENTS

North Carolina state law requires proof of immunizations to protect you and others while you are in attendance. Under North Carolina regulations, a student must be dropped from classes if the immunization requirements are not met.

STUDENTS 17 YEARS OF AGE AND YOUNGER

Doses	Immunization
3	DTP (Diphtheria, Tetanus, Pertussis) or 3 Td (Tetanus-diphtheria) doses; one of the three doses must be within the last ten years
3	Polio (*oral*) doses
	AND
2*	MEASLES (*Rubella*) doses on or after the first birthday
1**	RUBELLA dose on or after first birthday
1	MUMPS dose on or after first birthday
	OR
2	MEASLES (Rubella), MUMPS, RUBELLA Combination (Both given on or after first birthday)

STUDENTS 18-49 YEARS OF AGE

Doses	Immunization
3	DTP or 3 Td doses; one of the three doses must be within the last ten years
	AND
2*	MEASLES (*Rubella*) doses on or after the first birthday
1**	RUBELLA dose on or after first birthday
1	MUMPS dose on or after first birthday
	OR
2	MEASLES (Rubella), MUMPS, RUBELLA Combination (Both given on or after first birthday)

STUDENTS 50 YEARS OF AGE AND OLDER

Doses	Immunization
3	Primary series of 3 DTP or 3 Td doses; one of the three doses must be within the last ten years.

ADDITIONAL REQUIREMENT FOR INTERNATIONAL STUDENTS

Doses	Immunization
1	Tuberculin Skin Test (PPD) within the 12 months preceding classes
1	Chest x-ray if test is positive

**History of physician-diagnosed measles disease OR laboratory proof of immunity is acceptable. Must repeat measles vaccine if either dose is received even one day prior to first birthday. Copy of laboratory report must be attached.*

***ONLY laboratory proof of immunity to rubella is acceptable; physician-diagnosed rubella disease is not acceptable. Copy of laboratory report must be attached.*

Each student is responsible for providing complete records to the Student Health Center upon notification of admission to the University. Immunizations information and an Immunizations Form are available for download at www.studenthealth.uncc.edu. It is permissible to attach official copies (i.e., signed or stamped by a physician, health department, etc.) of any records that verify your immunizations. Be sure to include your name, student identification number, and your date of birth on each page of your records.

Notification of incomplete records will be mailed to any student providing records of immunization to the Student Health Center that are not in full compliance with the North Carolina State Law.

The following students are exempt from these requirements:

(1) Students who attend classes only in the evening (i.e., after 3:30 p.m.).
(2) Students who attend classes off-campus only.
(3) Students who enroll in no more than four hours per semester.
(4) Medical and religious exemptions can be requested through the Student Health Center.

Although a physical is not required for admission to the university you are strongly encouraged to contact your healthcare provider or local health department to discuss additional recommendations for vaccinations for your age group.

Questions can be directed to the Immunizations office, phone number 704-687-4619, and forms should be directed to:

UNC Charlotte Student Health Center
Attn: Immunization Office
9201 University City Blvd
Charlotte, NC 28223

ADULT STUDENTS ADMISSION PROGRAM (ASAP)

Adult students, 24 years of age or older who have been out of school for five or more years and present appropriate educational credentials, are encouraged to make application through the Undergraduate Admissions Office. This unique program offers adults the opportunity for special admissions status, an academic advisor through the Office of Adult Students and Evening Services (OASES), and adult transitional support services throughout the first two years of their enrollment. Students who declare a major are advised through their major department.

ADMISSION FOR SECOND BACCALAUREATE DEGREE

Students who have earned a bachelor's degree from UNC Charlotte or another accredited institution may apply for admission to a program leading to a second degree of the same level if the following requirements are met:

1) A completed application must be sent to the Undergraduate Admissions Office in accordance with the published application dates.
2) The major field selected must be different from that of the first degree.
3) The degree sought must be different from the first when that degree was granted by UNC Charlotte.
4) The applicant must meet the requirements for acceptance into the selected field.

READMISSION OF FORMER STUDENTS

For details on readmission of former students, please see the "Academic Regulations" section of this *Catalog*.

OTHERS ELIGIBLE FOR ADMISSION

Escrow Program Participants. The Escrow Program provides an opportunity for highly qualified students over the age of 15 to take college credit courses while enrolled in secondary school. Records of credit earned will be maintained for use at the University or at another institution of higher learning.

Applicants recommended for participation in the program usually have shown great ability in particular academic areas. The recommendations are normally made by the secondary school principal.

Requests for additional information and application forms should be directed to the Office of Undergraduate Admissions at UNC Charlotte.

Senior Citizens. Residents of North Carolina who have attained the age of 65 and who meet applicable admission standards may enroll tuition-free on a space available basis. Senior citizens are obligated to pay any special fees or service charges that are assessed all students. Interested persons should contact the Office of Undergraduate Admissions.

Certain programs that are not supported by state funds follow different tuition regulations, and the tuition waiver for residents over the age of 65 does not apply to these programs. Examples of programs that set their own costs for which the senior citizen tuition waiver does not apply include Education Abroad, some non-credit courses, and other specialized programs.

Non-degree Students. Non-degree students are those who are not seeking a degree at UNC Charlotte. If space is available, they may enroll in undergraduate courses at the University until they have attempted a total of 18 semester hours with grade evaluation. Regular degree students will have preference for places in classes. Non-degree students are expected to conform to the standards required of all students. After reaching the 18-hour limit, non-degree students must be reviewed and be acceptable for regular degree status before continuing at the University.

Non-degree students who have done previous college work (including UNC Charlotte) must be eligible to

return to the institution last attended.

The student must be 18 years of age or over and must understand at the time of his/her registration that the work completed in non-degree student status will be evaluated in terms of major department and degree requirements only after the student's formal admission to a degree program.

Visiting Students. Students enrolled at other colleges and universities who have written permission from their institutions to take specified courses at the University in a given semester or term may be admitted as visiting students. They register on a space available basis after UNC Charlotte degree-seeking students.

NEW STUDENT ORIENTATION/REGISTRATION

New students are encouraged to participate in one of the **Student Orientation, Advising, and Registration (SOAR)** sessions scheduled in June and at the beginning of each semester. Separate programs are offered for *Freshmen*, their parents, and for *Transfers*. Activities include academic advising, placement tests in mathematics, and foreign language proficiency tests; introduction to academic support services, student organizations, and campus life; and registration for classes.

International Student Orientation. An orientation, held at the beginning of every semester, is required for non-resident (F-1 & J-1 visas) students. Orientation topics include immigration, academics, cultural adjustment, and program opportunities. Contact the International Student/Scholar Office or visit their website online at www.isso.uncc.edu for more information.

University Regulation of Student Conduct

As students willingly accept the benefits of membership in the UNC Charlotte academic community, they acquire obligations to observe and uphold the principles and standards that define the terms of the UNC Charlotte community.

The University of North Carolina at Charlotte has enacted two codes governing student conduct, *The UNC Charlotte of Student Academic Integrity* and *The UNC Charlotte Code of Student Responsibility*. The University has also enacted a program for the prevention of the use of illegal drugs and alcohol abuse. All UNC Charlotte students are obligated to be familiar with these codes and to conduct themselves in accordance with the standards set forth.

Additionally, the Student Government Association has created a code called *The Noble Niner* that solidifies the high standard of morals, principles, and integrity that all students should strive to uphold to bolster the growing reputation of excellence at UNC Charlotte.

THE UNC CHARLOTTE CODE OF STUDENT ACADEMIC INTEGRITY

The UNC Charlotte Code of Student Academic Integrity governs the responsibility of students to maintain integrity in academic work, defines violations of the standards, describes procedures for handling alleged violations of the standards, and lists applicable penalties. The following conduct is prohibited in that *Code* as violating those standards:

A. **Cheating.** Intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices in any academic exercise. This definition includes unauthorized communication of information during an academic exercise.

B. **Fabrication and Falsification.** Intentional and unauthorized alteration or invention of any information or citation in an academic exercise. Falsification is a matter of altering information, while fabrication is a matter of inventing or counterfeiting information for use in any academic exercise.

C. **Multiple Submission.** The submission of substantial portions of the same academic work (including oral reports) for credit more than once without authorization.

D. **Plagiarism.** Intentionally or knowingly presenting the work of another as one's own (i.e., without proper acknowledgment of the source). The sole exception to the requirement of acknowledging sources is when the ideas, information, etc., are common knowledge.

E. **Abuse of Academic Materials.** Intentionally or knowingly destroying, stealing, or making inaccessible library or other academic resource material.

F. Complicity in Academic Dishonesty. Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

A full explanation of these definitions, and a description of procedures used in cases where student violations are alleged, is found in the complete text of The UNC Charlotte Code of Student Academic Integrity. This *Code* may be modified from time to time. Students are advised to contact the Office of the Dean of Students or go to www.legal.uncc.edu/policies/ps-105.html to ensure they consult the most recent edition.

THE UNC CHARLOTTE CODE OF STUDENT RESPONSIBILITY

Conduct Rules and Regulations

The following conduct, or an attempt to engage in the following conduct, is subject to disciplinary action: **[Note: Letters J, P, and U have been intentionally omitted for continuity in record-keeping.]**

A. 1. Inflicting physical injury upon a person
2. Placing a person in fear of or at risk of imminent physical injury or danger;
3. Committing sexual invasion, sexual assault, or sexual misconduct, as those terms are defined herein;
4. Committing sexual harassment as defined herein;
5. Inflicting severe mental or emotional distress upon a person through a course of conduct involving repeated abuse or disparagement;
6. Engaging in "fighting words" harassment, as that term is defined in Policy Statement #95 (online at www.legal.uncc.edu/policies/ps-95.html). The full text of Policy Statement #95 is available online or in the Office of the Dean of Students).

B. Using, possessing, or storing any weapon, dangerous chemical, or explosive without authorization.

C. Initiating or causing to be initiated any false report, warning or threat of fire, explosion, or other emergency.

D. Interfering with normal University activities including, but not limited to, teaching, studying, research, the expression of ideas, University administration, speeches and other public or private events, and fire, police or other emergency services. Acts prohibited by this rule include, but are not limited to, those acts prohibited in University Policy Statement #58, "Interference with University Operations," found online at www.legal.uncc.edu/policies/ps-58.html, which prohibits student action taken "with intent to obstruct or disrupt any normal operation or function of the University," and Policy Statement #96, "Conduct at Speech Events," found online at www.legal.uncc.edu/policies/ps-96.html, which prohibits certain disruptive activities at speech events on campus. Full texts of both policies are available online or in the Office of the Dean of Students.

E. Knowingly violating the terms of any disciplinary sanction imposed in accordance with this Code.

F. Possessing, consuming, or using any controlled substance or drug paraphernalia, or manufacturing, selling or delivering any controlled substance or possessing with intent to manufacture, sell or deliver, any controlled substance; huffing or sniffing any substance not intended for such use. Minimum penalties and certain other requirements apply where controlled substance offenses are at issue, pursuant to University Policy Statement #87, "Program to Prevent Use of Illegal Drugs and Alcohol Abuse." That Policy is available online at www.legal.uncc.edu/policies/ps-87.html or in the Office of the Dean of Students.

G. Setting fires, or misusing or damaging fire safety equipment or elevators.

H. Furnishing false information to the University; misrepresenting or concealing one's organizational affiliation(s) or sponsorship(s) for the purpose of enticing another person into joining or participating in a group or organization.

I. Forgery, unauthorized alteration, or unauthorized use or misuse of any document or instrument of identification (ID); displaying or using an ID that is not one's own or is fictitious, canceled, revoked, suspended, or altered; counterfeiting, loaning, or selling an ID to another person not entitled thereto.

K. Theft or attempted theft of property or services, the unauthorized use or access to private or confidential information in any medium, possessing stolen property; or possessing property that is not your own without owner authorization.

L. Destroying or damaging the property of others or University property.

M. Failing to comply with the reasonable directions of University officials, including but not limited to campus police officers or Residence Life Staff, acting in performance of their duties.

N. Violating published University regulations or policies, as approved by the Vice Chancellor for Student Affairs. Such regulations or policies include but are not limited to all Housing and Residence Life policies and the residence hall contract, as well as regulations relating to entry and use of University facilities, use of vehicles and amplifying equipment, campus demonstrations, and misuse of identification cards.

O. Possessing, consuming, or distributing alcoholic beverages without University authorization, including but not limited to:

1. operating a motor vehicle under the influence alcohol or while impaired by the consumption of alcohol;
2. possessing or consuming alcoholic beverages by students below the legal minimum age;
3. displaying or consumption of alcoholic beverages in campus residences by students less than twenty-one years of age;
4. furnishing, or selling any alcoholic beverages to any person not of sufficient legal age to possess or consume such alcoholic beverage;
5. failing to abide by the provisions of an "Acknowledgment of Responsibility for Service of Alcoholic Beverages" form; or
6. making any sale of any alcoholic beverage on the University campus. (The full text of University Policy Statement #57, "Alcoholic Beverages," is available online at www.legal.uncc.edu/policies/ps-57.html or in the Office of the Dean of Students.)

Q. Being present in or using University premises, facilities, or property without University authorization.

R. Using or possessing fireworks on University premises or at University activities without University authorization.

S. Engaging in conduct that disrupts or interferes with the normal functions of a class, including use of cell phones or other electronic devices for voice or text communication, unless permitted by the instructor, or engaging in disorderly conduct such as fighting, threatening behavior, public disturbance, or drunk and disorderly conduct. Disorderly conduct also includes any unauthorized use of electronic or other devices to make an audio or video record of any person while on University premises without his/her prior knowledge, or without his/her effective consent when such a recording is likely to cause injury or distress. This includes, but is not limited to, surreptitiously taking pictures of another person in a gym, locker room, or restroom.

T. Violation of Policy Statement #83, "Hazing," found online at www.legal.uncc.edu/policies/ps-83.html or in the Office of the Dean of Students.

V. Engaging in **computer abuse**, including but not limited to violation of:

1. Policy Statement #8, "World Wide Web," found online at www.legal.uncc.edu/policies/ps-8.html
2. Policy Statement #10, "Network Security," found online at www.legal.uncc.edu/policies/ps-10.html
3. Policy Statement #20, "Electronic Communication Systems," found online at www.legal.uncc.edu/policies/ps-20.html
4. Policy Statement #66, "Responsible Use of University Computing and Electronic Communication Resources," found online at www.legal.uncc.edu/policies/ps-66.html
5. Policy Statement #67, "Proprietary Software," found online at www.legal.uncc.edu/policies/ps-67.html
6. Policy Statement #102, "Data and Information Security," found online at www.legal.uncc.edu/policies/ps-102.html
7. Peer-to-Peer File Sharing Regulation, found online at www.legal.uncc.edu/policies/p2p.html
8. Regulation on Security of Electronic Individually Identifiable Health Care Information under HIPAA, found online at www.legal.uncc.edu/policies/HIPAA.html
9. Regulations on Information Systems Security, found online at www.legal.uncc.edu/policies/infosystemssecurity.html
10. Regulations on the Use of Social Security Numbers, found online at www.legal.uncc.edu/policies/ssn.html

W. Gambling for money or other things of value except as allowed by law. Prohibited gambling includes, but is not limited to, betting on, wagering on, or selling pools on any University athletic event; possessing any card, book, or other device for registering bets, or bookmaking in connection with betting.

A full explanation of prohibited conduct, and a description of procedures used in cases where student violations are alleged, is found in the complete text of The UNC Charlotte Code of Student Responsibility. This *Code* may be modified from time to time. Students are advised to contact the Office of the Dean of Students or go to www.legal.uncc.edu/policies/ps-104.html to ensure they consult the most recent edition.

PROGRAM TO PREVENT USE OF ILLEGAL DRUGS AND ALCOHOL ABUSE (POLICY #87)

General. In keeping with efforts to maintain an environment that supports and encourages the pursuit and dissemination of knowledge, it is the policy of The University of North Carolina at Charlotte to consider the use of illegal drugs or alcohol abuse by students, faculty and staff or by others on premises under University control to be unacceptable conduct that adversely affects the educational environment.

To remind students, faculty, and staff of their responsibilities for maintaining a drug-free environment, this Policy will be distributed throughout the University community each year. Further, the University considers a sound awareness, education, and training program indispensable in combating illegal use of drugs and alcohol abuse, both as a preventive measure and as a remedy. The scope of the University program addresses the awareness needs of students, faculty, administrators, and other staff members and includes the following minimum components.

- The health hazards associated with the use of illegal drugs and with alcohol alone.
- The incompatibility of the use of illegal drugs or abuse of alcohol with maximum achievement of personal, social, and educational goals.
- The potential legal consequences (including both criminal law and University discipline) of illegal drug abuse.
- The effective use of available campus and community resources in dealing with illegal drug abuse and alcohol abuse problems.

Definitions. For the purposes of this Policy, the following definitions apply:

The term "alcohol abuse" is defined as a pattern of alcohol use leading to impairment or distress, including

1. alcohol use that contributes to (a) a failure to meet satisfactory job expectations or (b) interference with the ability to perform job responsibilities, (including repeated absences or poor work performance related to alcohol use);

2. alcohol use in situations in which it is physically hazardous to the user or others;

3. alcohol-related legal problems; or

4. social or interpersonal problems caused or exacerbated by the effects of alcohol use

The term "illegal drug use" is defined as use of those drugs or substances that is prohibited by state or federal law.

Responsibilities. It is the responsibility of all students, faculty, and staff to conduct themselves in a way that contributes to an environment free of illegal drug use and abuse of alcohol. In addition, students, faculty, and staff are responsible, as citizens, for knowing about and complying with the provisions of North Carolina law that make it a crime to possess, sell, deliver, or manufacture those drugs designated collectively as "controlled substances" in Article 5 of Chapter 90 of the North Carolina General Statutes, as well as federal law (Drug Free Workplace Act), which prohibits unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance in the workplace of any employer receiving federal grant funds.

The Director of Wellness Promotion is responsible for designing and carrying out a program of awareness education and training for students on the subject of preventing the illegal use of drugs and abuse of alcohol. The Director of Employee Relations, Training, and Compliance in the Department of Human Resources is responsible for awareness education and training programs for faculty and staff members in supervisory positions on the subject of preventing substance abuse.

The Director of the Counseling Center shall, within the limits of available resources, provide services and programs to students seeking assistance with problems of illegal drug use or alcohol abuse. In cases in which the treatment needs of such students exceed the resources of the Center, the Center shall provide referral to appropriate facilities in the community. The Director of Employee Relations in the Department of Human Resources shall provide faculty and staff information regarding the University's Employee Assistance Program (EAP), which will offer consultation about alcohol and drug problems and referral to alcohol and drug treatment facilities in the community. The Counseling Center shall also be available to provide community referral information for treatment of faculty and staff on request.

Collaboration with Community Resources. The University's program emphasizes collaboration with local resources such as the Substance Abuse Prevention Services of the Carolinas, Chemical Dependency Center of Charlotte-Mecklenburg, Mecklenburg County Substance Abuse Services, McLeod Center, Alcoholics Anonymous, Narcotics Anonymous, Al-Anon, Nar-Anon, etc. To this end, the University shall participate in the Charlotte-Mecklenburg Drug-Free Coalition and will work with local advisory boards to further collaborate between the University and the Charlotte Community.

Education and Prevention Activities. The University's institution-wide awareness, education, and training efforts stress prevention. The goal of these efforts is (1) to encourage non-users of illegal drugs and alcohol to continue to be non-users, (2) to encourage users of alcohol to do so responsibly, and (3) to encourage users of illegal drugs to stop such use.

Illegal Use of Drugs and Abuse of Alcohol. The use of illegal drugs and the abuse of alcohol are considered by the University to be problems that can be overcome. Therefore, the educational and rehabilitative services cited above are available on a confidential basis. However, the possession, sale, delivery, or manufacture of illegal drugs will not be tolerated on campus or off campus in the event that the interests of the University may be affected.

The University will cooperate fully with law enforcement agencies and will apply appropriate disciplinary procedures should a student, faculty member, or staff member violate criminal statues with regard to illegal drugs. Violations subject a student, faculty member, or staff member to prosecution and

punishment by civil authorities **and** to disciplinary action by the University. It does not constitute "double jeopardy" for the University to initiate its own disciplinary proceedings for the same offense when the alleged conduct is deemed to affect the interests of the University.

Under federal law, employees convicted of any criminal drug offense occurring in the workplace are required to notify the University by informing the appropriate Vice Chancellor's office no later than five (5) days after such conviction. Disciplinary action and/or participation in a drug rehabilitation/education program as a result of University disciplinary proceedings must commence within 30 days of notice of conviction.

Upon receiving notice of a violation of this Policy, the University will initiate disciplinary procedures applicable to one's status as a member of the University community:

Status	Document
Students	*UNC Charlotte Code of Student Responsibility*
SPA Staff	*State Personnel Manual*
EPA Staff	*Policy Statement #64, Personnel Policies for Designated Employment Exempt from the State Personnel Act*
Faculty	*Section 603 of the UNC Code and Section 8 of the Tenure Policies, Regulations, and Procedures of UNC Charlotte*

Minimum sanctions set forth below in the Policy shall also apply to employees who do not fall in any of the categories above. In the event a student is also an employee of the University, the minimum sanctions for employment status as well as student status shall apply.

The use of illegal drugs may result in a variety of sanctions, from written warnings with probationary status to expulsion from enrollment or discharge from employment. However, in accordance with the Policy on Illegal Drugs adopted by the Board of Governors of the University of North Carolina, the following minimum penalties shall be imposed for the particular offenses described.

Trafficking in Illegal Drugs

1. For the illegal manufacture, sale, or delivery, or possession with intent to manufacture, sell, or deliver, of any controlled substance, identified in Schedule I, N.C. General Statutes 90-89, or Schedule II, N.C. General Statutes 90-90, a student shall be expelled and a faculty member or staff member shall be discharged.

2. For a first offense involving the illegal manufacture, sale, or delivery, or possession with intent to manufacture, sell, or deliver, of any controlled substance identified in Schedules III through VI; N.C. General Statutes 90-91, 90-92, 90-93, and 90-94, the minimum penalty shall be suspension from enrollment or disciplinary suspension without pay from employment for a period of at least one semester or its equivalent. For a second offense, a student shall be expelled and a faculty member or staff member shall be discharged.

Illegal Possession of Drugs

1. For a first offense involving the illegal possession of any controlled substance identified in Schedule I, N.C. General Statutes 90-89, or Schedule II, N.C. General Statutes 90-90, the minimum penalty shall be suspension from enrollment or disciplinary suspension without pay from employment for a period of at least one semester or its equivalent.

2. For a first offense involving the illegal possession of controlled substance identified in Schedule III through VI, N.C. General Statutes 90-91, 90-92, 90-93, and 90-94, the minimum penalty shall be probation, for a period to be determined on a case-by-case basis. A person on probation must agree to participate in a drug education and counseling program, consent to regular drug testing, and accept such other conditions and restrictions, including a program of community service, as the Chancellor or the Chancellor's designee deems appropriate. A requirement to undertake community service under this Policy may not be fulfilled by using paid Community Service Leave (www.hr.uncc.edu/Policies/PIM46.htm). Refusal or failure to abide by the terms of probation shall result in suspension from enrollment or disciplinary suspension without pay from employment for any unexpired balance of the prescribed period of probation.

3. For second or other subsequent offenses involving the illegal possession of controlled substances, progressively more severe penalties shall be imposed, including expulsion of students and discharge of faculty members or staff members.

Suspension for a Minimum Period of "One Semester or its Equivalent." Suspension for a minimum period of "one semester or its equivalent" means forfeiture of at least one full semester of academic credit or attendance. Such a sanction may be accomplished either (1) by suspending the student for the unexpired balance or the semester during which responsibility is determined, with attendant loss of all academic credit for that semester, or (2) by placing the student on probation for the unexpired balance of the semester during which responsibility is determined and suspending the student for the duration of the next succeeding semester.

In the case of a faculty member or staff member, suspension for a minimum period of "one semester or its equivalent" means forfeiture of pay for a period of 18 weeks. Since the current State Personnel Act specifies that disciplinary suspensions cannot exceed two work weeks, offenses for which an eighteen-week

minimum suspension is required by the Board of Governors' policy will result in discharge of an employee subject to the State Personnel Act.

Suspension Pending Final Disposition. When a student, faculty member, or staff member has been charged by the University with a violation of policies concerning illegal drugs, he or she may be suspended from enrollment or employment before initiation or completion of regular disciplinary proceedings if, assuming the truth of the charges, the Chancellor or, in the Chancellor's absence, the Chancellor's designee concludes that the person's continued presence within the University community would constitute a clear and immediate danger to the health or welfare or other members of the University community; provided, that if such a suspension is imposed, an appropriate hearing of the charges against the suspended person shall be held as promptly as possible thereafter.

References. The use of alcoholic beverages on the University campus is regulated by Policy Statement #57, "Policy on Alcoholic Beverages." Policy Statement #62, "Employee Assistance Program," establishes a free employee assistance service as part of the Department of Human Resources. Please also see Personnel Information Memorandum #18, "Drug Free Workplace Reporting Requirements" (www.hr.uncc.edu/Policies/PIM18.htm).

THE NOBLE NINER CODE

Scholarship
A Niner shall strive for academic excellence in and out of the classroom without compromising academic honesty and ethical values.

Integrity
A Niner shall act to uphold and improve one's self, the community, and the university's reputation.

Respect
A Niner shall welcome all aspects of individuality and self-worth while embracing the learning opportunities that diversity provides.

Accountability
A Niner shall hold others responsible for their actions while accepting responsibility of their own.

Dignity
A Niner shall display appreciation for the formality of the institution and preservation of the environment.

Honor
A Niner shall appreciate students, faculty and administration as essential members of the University community.

Compassion
A Niner shall demonstrate genuine consideration and concern for the needs, feelings, ideas, and well-being of others.

Character
A Niner shall exemplify all qualities and traits that promote fellowship and comradery among the study body and administration.

Nobility
A Niner shall exhibit the virtues and values deeming them a distinguished member of our Niner Nation.

Academic Regulations and Degree Requirements

STUDENT RESPONSIBILITY

Each student is responsible for the proper completion of his or her academic program, for familiarity with the *UNC Charlotte Undergraduate Catalog,* for maintaining the grade point average required, and for meeting all other degree requirements. The advisor will counsel, but the final responsibility remains that of the student.

A student is required to have knowledge of and observe all regulations pertaining to campus life and student behavior. The University has enacted two codes of student responsibility --**The UNC Charlotte Code of Student Academic Integrity** and **The UNC Charlotte Code of Student Responsibility** -- which are summarized in this *Catalog* and available in full online at www.legal.uncc.edu/policies/#student. As students willingly accept the benefits of membership in the UNC Charlotte academic community, they acquire obligations to observe and uphold the principles and standards that define the terms of UNC Charlotte community cooperation and make those benefits possible.

Each student is responsible for checking their uncc.edu email regularly, as well as maintaining communication with the University and keeping on file with the Office of the Registrar at all times a current address, including ZIP code, and telephone number.

Each student, while associated with the University, is expected to participate in campus and community life in a manner that will reflect credit upon the student and the University.

ABOUT THE CATALOG (POLICIES INCLUDED)

The *Catalog* is not an irrevocable contract. Regulations published in it are subject to change by the University at any time without notice. University regulations are policy statements to guide students, faculty, and administrative officers in achieving the goals of the institution. Necessary interpretations of these policies will be made by the appropriate authorities with the interest of the students and the institution in mind. Students are encouraged to consult an advisor if they have questions about the application of any policy.

The University reserves the right to change any of the rules and regulations of the University at any time, including those relating to admission, instruction, and graduation. The University also reserves the right to withdraw curricula and specific courses, alter course content, change the calendar, and to impose or increase fees. All such changes are effective at such times as the proper authorities determine and may apply not only to prospective students, but also to those who are already enrolled in the University.

Each new edition of the *UNC Charlotte Undergraduate Catalog* becomes effective at the opening of the fall semester following its publication. To receive a degree, an undergraduate student must satisfactorily complete all requirements described in the *Catalog* in effect at the time of first enrollment as a degree student at the University or all requirements described in the *Catalog* in effect at the time of graduation. Any student who changes from one major or minor to another must meet requirements of the new major or minor in effect at the time of the change.

Any student who leaves the University or changes to another major or minor for a period of one calendar year or longer and then returns to the University or to the original major or minor will be required to meet requirements in effect at the time of return.

Exceptions to these policies may be necessitated by changes in course offerings, degree programs or by action of authorities higher than the University. In that event, every effort will be made to avoid penalizing the student.

ACADEMIC ADVISING

www.advising.uncc.edu

Each student at UNC Charlotte is assigned an academic advisor or advisory committee in the student's major field of study. Students who have declared a major, or pre-major, should seek advising from their advisor in that academic department. (Freshmen with majors in Arts and Sciences departments are advised by the Arts and Sciences Advising Center during their first year of study.) Students who have more than one major should seek advice from each of their assigned advisors in each academic department.

Students who have not yet chosen a major will be assigned an advisor from the University Advising Center. The University Advising Center also provides services to freshman and transfer students who enter the University as pre-declared majors, sophomores who remain pre-declared, students who are transitioning from one major to another, and students needing assistance in clarifying general education program requirements. In helping these students to achieve their educational and career goals, the advisors will focus on enhancing the student's transition from high school or community college, will offer assistance in understanding University policies and procedures, and refer students to campus services that will aid in determining the major program that best suits the student's career goals. The advisors will also facilitate the development of decision-making skills critical to success in college and life. Each student's assigned advisor will communicate regularly with the student throughout the year about important dates, programs, and services that will help ensure success at UNC Charlotte.

The advisor assists the student to develop a plan of study based on the student's prior preparation and objectives. However, this assistance is not a substitute for the personal responsibility of the student described earlier in this section on *Student Responsibility.*

COURSE LOAD

Credits/Semester Hours. The unit of measurement of University work is the *semester hour.* It ordinarily represents one lecture hour per week for one semester; however, a sequence of two or three laboratory hours is considered to be the equivalent of one lecture hour. Semester hours are also referred to as credit hours or credits. A bachelor's degree requires 120-128 semester hours.

Course Load. ***A course load of 15-18 hours constitutes a normal full semester program for undergraduates. A student must complete 15-16 hours per semester to complete a bachelor's degree in four academic years.*** Enrollment in more than 18 hours in a semester requires advance written approval of the dean of the student's major college. An undergraduate student enrolled in 12 or more hours is considered to be a full-time student and must pay full tuition and fees.

A standard load for an undergraduate student enrolled in a summer session is six to seven credit hours. Enrollment in more than seven credit hours in a single summer session, or in concurrent summer sessions (e.g., a 10-week and a 5-week session), requires advance written approval of the dean of the student's major college.

The appropriate course load for an undergraduate student is dependent on two factors: scholastic ability as reflected by the student's academic history and available study time. Successful academic achievement usually requires about two hours of study per week outside of class for each credit hour in which the student is enrolled. For example, enrollment in 16 hours would require about 32 hours of outside preparation per week.

Tuition Surcharge. Undergraduate students who attempt more than 140 credit hours (or more than 110% of the hours required to complete their baccalaureate degree program) are subject to a 25% tuition surcharge on the excess hours taken. However, the surcharge will not apply to students who exceed these credit hour limits while completing their degree within the equivalent of four academic years, or in the case of five-year programs, within the equivalent of five academic years. (One quarter of enrollment at an institution on the quarter system equals two-thirds of a semester.) Finally, the surcharge does not apply to students entering the University before Fall 1994.

Credit hours that count toward the specified limits include: all courses attempted at UNC Charlotte during the fall and spring semesters (including repeated courses, failed courses, and those dropped after the last date to drop or withdraw without record) and all transfer credit hours (except those earned during summer sessions at another UNC institution). The maximum transfer credit hours applied toward the surcharge limit are the total hours required for the degree less the 30 hours necessary to meet residence

requirements. For complete information, please visit www.registrar.uncc.edu/students/surcharge.htm.

University Student Surveys. For purposes of program assessment and improvement, as part of enrollment at UNC Charlotte, students may be required to complete three or more institutional student surveys (e.g., surveys of entering freshmen, second semester sophomores, and graduating seniors).

Student Classification. At the beginning of each semester, regular students working toward a bachelor's degree are classified on the basis of earned semester hours:

Classification	Earned Semester Hours
Freshman	0-29
Sophomore	30-59
Junior	60-89
Senior	90 or more

REGISTRATION

The Registrar is responsible for the management of the registration process by which students enroll in classes. Please see the Registrar's web page at www.registrar.uncc.edu.

Through the registration process, students assume academic and financial responsibility for the classes in which they enroll. They are relieved of these responsibilities only by formally terminating enrollment by dropping or withdrawing in accordance with deadlines specified in the Academic Calendar, which can be found online at www.registrar.uncc.edu/calendars/calendar.asp.

Registration Appointment Time assignments are made according to student classification and credits and can be viewed on the web.

Registration Deadlines. University policies determine when students may enroll or adjust their enrollment in classes. Deadlines for the spring and fall semesters are shown below. (*Deadlines for summer sessions are approximately proportional based on the length of the session.)*

- **Register** for classes through the eighth instructional day of the semester.
- **Drop a class without record** (and remain enrolled in other classes) through the sixth instructional day of the semester.
- **Withdraw from the University without record** through the sixth instructional day of the semester.
- **Drop a class with grade of *W* recorded** (and remain enrolled in other classes) through the tenth week of classes in the semester. No student will be allowed to drop a course after this deadline unless there are extenuating circumstances recognized by the University.
- **Withdraw from the University with grade of *W* recorded** after the sixth instructional day through the third week prior to the last day of classes of the semester. No student will be allowed to withdraw after this deadline unless there are extenuating circumstances recognized by the University. (See the "Termination of Enrollment" heading later in this section of this *Catalog*.)

Prerequisites and Permits. Credit will be awarded only to students who are properly registered for it. All students, including visitors and non-degree students, are required to meet course prerequisites and to obtain the required permissions to enroll in courses through the department which sponsors the course.

Auditors. With the permission of the instructor, a student may register as an *auditor* for any class in which space is available. Fees and procedures for this non-credit enrollment are the same as those for a credit enrollment.

No student will be allowed to change the designation of a course from audit to credit or from credit to audit after the eighth instructional day of a semester (or a proportional period for summer school).

The participation of auditors in class discussion and in tests or examinations is optional with the instructor. Auditors receive no University credit, but they are expected to attend class regularly. A formal record of the audit on the student's transcript is entered at the discretion of the instructor at the end of the course. The procedure for adding or dropping an audit course is the same as for credit enrollments.

Dual Undergraduate and Graduate Registration. Undergraduate students at UNC Charlotte who are required to take fewer than 12 semester hours of undergraduate work to fulfill all requirements for the bachelor's degree may be allowed during their final semester to enroll in certain courses for the purpose of obtaining graduate credit. Authorization for dual undergraduate/graduate registration may be obtained by submitting to the Dean of the Graduate School an Academic Petition approved by the student's undergraduate academic advisor, the instructor(s) of the graduate course(s), and the dean(s) of the college(s) offering the graduate course(s), accompanied by the regular application for admission to graduate study and supporting credentials. The total hours to be carried in this status shall not exceed 12 hours, of which no more than nine may be for graduate credit. On the basis of work attempted prior to the final semester, such students must meet the grade point criteria for admission to a graduate degree program at the University. No course for which credit is applied to an undergraduate degree may receive graduate credit.

Permission to take graduate courses under dual registration does not constitute admission to any graduate degree program at the University.

Consortium Registration. The Charlotte Area Educational Consortium offers an inter-institutional exchange during the fall and spring semesters for *full-time undergraduate* students. UNC Charlotte students may take courses *not available at UNC Charlotte* at one of the institutions listed below, have them appear on their transcript, and be computed in their grade point average at this University. The registration process is initiated in the Office of the Registrar and requires the approval of the student's college dean.

- Belmont Abbey College
- Cabarrus College of Health Science
- Carolinas College of Health Sciences
- Catawba College
- Catawba Valley Community College
- Central Piedmont Community College
- Cleveland Community College
- Davidson College
- Gardner-Webb University
- Gaston College
- Gordon-Conwell Theological Seminary
- Johnson C. Smith University
- Lenoir-Rhyne College
- Livingstone College
- Mitchell Community College
- Pfeiffer University
- Queens University of Charlotte
- Stanly Community College
- South Piedmont Community College
- University of South Carolina at Lancaster
- Wingate University
- Winthrop University
- York Technical College

Inter-Institutional Registration. An inter-institutional registration program is available for a limited number of undergraduate and graduate students with the University of North Carolina at Greensboro, North Carolina State University, University of North Carolina at Chapel Hill, Duke University, and NC Central University. The registration process is initiated in the Office of the Registrar and requires the approval of the student's college dean.

TERMINATION OF ENROLLMENT

Drop. A student may terminate enrollment in a course but continue enrollment in other courses by following the procedure to drop a course specified in the Academic Calendar (www.registrar.uncc.edu/calendars/calendar.asp). A student enrolled in only one course must withdraw officially from the University to drop the course.

Withdrawal from the University. Any student voluntarily leaving the University before the close of the term must withdraw officially. A student initiates the withdrawal procedure and files the completed form at the Office of the Registrar in person or by letter. A withdrawal is effective when the form or letter is received by the Office of the Registrar. A student who withdraws from the University after the sixth instructional day will receive the grade of *W* for all courses in progress. No student will be allowed to withdraw within two weeks prior to the last day of class (or as close to half the summer term as possible) unless there are extenuating circumstances such as serious illness recognized by the University and approved by the student's dean.

Any student who leaves the University before the close of a term without withdrawing officially will receive a failing or unsatisfactory grade (*F* for undergraduate credit and *U* for graduate credit) in each course for which he/she is registered. A graduate student who receives a *U* must appeal to the Dean of the Graduate School for reinstatement.

ATTENDANCE POLICY

Each instructor determines the attendance regulations for his or her classes. Students are expected to attend punctually all scheduled sessions in the courses for which they are registered and are responsible for completing the work from all class sessions.

Absences from class may be excused by the instructor for such reasons as personal illness, religious holidays, or participating as an authorized University representative in an out-of-town event. Whenever possible, students are expected to seek the permission of the instructor prior to absences.

DEGREE OR MAJOR PROGRAMS AND MINORS

Declaration of a Major. Undergraduate students must declare and be accepted into a major field of study, or a pre-professional program, by the time they have earned 60 semester hours of credit. Transfer students entering with 45 to 74 semester hours must declare and be accepted into a major field of study by the time they have earned 15 semester hours at UNC Charlotte. Transfer students entering with 75 or more semester hours must be accepted into a major as a condition for admission. Students who do not satisfy these requirements must have permission from the Dean of the College of Arts and Sciences to register for classes.

To facilitate the declaration process, advising is required prior to registration for continuing students who have completed 45 hours or more and have not been accepted into a major or pre-professional program.

Change of Degree or Major Program. An undergraduate student may change from one degree program or area of academic concentration to another when space is available provided he/she meets the prerequisites for admission to the new program and has appropriate written approval via a "Declaration of Program" filed at the Office of the Registrar.

Second Baccalaureate Major. Students who have earned a bachelor's degree from UNC Charlotte or are working on a bachelor's degree at UNC Charlotte may enroll in a program leading to a second major under the same degree provided: (1) the second major field selected is different from the first; (2) the student meets the requirements for acceptance into the second major program; and (3) the appropriate application for admission or "Declaration of Program" is filed and approved.

Minor. Students who have earned a bachelor's degree from UNC Charlotte or are working on a bachelor's degree at UNC Charlotte may enroll in a program leading to a minor (or minors) under that degree provided: (1) the minor field is different from the major field; (2) the student meets the requirements for acceptance into the minor program; and (3) the appropriate application for admission or "Declaration of Program" is filed and approved.

Second Baccalaureate Degree. Students who have earned bachelor's degrees from UNC Charlotte or other accredited institutions may enroll in a program leading to a second degree at the same level provided: (1) the major field selected is different from that of the first degree; (2) the degree sought is different from the first when that degree was granted by UNC Charlotte; and (3) the appropriate application for admission is filed and approved.

Students seeking a second baccalaureate degree must: (1) satisfy residency requirements if their first degree was not earned at UNC Charlotte; (2) achieve a minimum grade point average of 2.0 on all work attempted toward the second degree; and (3) satisfy all department and college requirements for the degree sought. Students who hold a baccalaureate degree from an accredited institution will not be required to satisfy the UNC Charlotte General Education requirements for a second degree.

Students who complete the equivalent of a double major in areas for which different degrees are awarded, but who have not met the requirements for the second degree, may have their accomplishment acknowledged by an appropriate notation on their transcript.

GRADING POLICIES

Instructors assign grades on the basis of their evaluation of the academic performance of each student enrolled in their courses. At the end of the term, the grades are reported to the Office of the Registrar which is responsible for maintaining student academic records and making grades available to students.

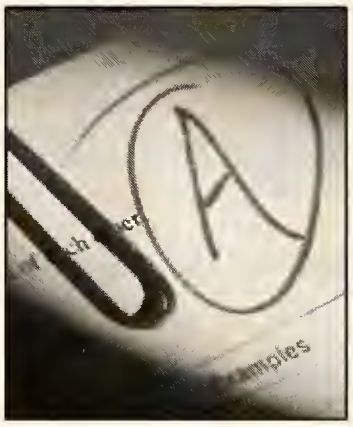
Final Grades. Final grades are available through the secure student access pages of 49er Express found online at: www.express.uncc.edu.

Unsatisfactory grade reports are mailed to students in the middle of each semester for courses in which the student is performing below average. Mid-term grades are also available through the student access pages of 49er Express.

Final Grade Changes and Appeals from Final Course Grades. When a final course grade other than *Incomplete (I)* is officially reported by the instructor at the end of an academic term, the grade is recorded by the Registrar and can be changed only if the grade has been assigned arbitrarily or impermissibly as defined in the Faculty's "Policy and Procedures for Student Appeals of Final Course Grades," available online at www.legal.uncc.edu/policies/GradeAppeal.html.

For guidelines on applying this policy, see: www.legal.uncc.edu/policies/GradeAppealGuide.html

Students should follow the procedures outlined in that policy if they believe that the final course grade that has been assigned is incorrect. The policy encourages the student to discuss the grade with the instructor as soon as possible after the grade is received. Students should note, however, that the University is not obliged to respond to a grade appeal unless the student files it with the appropriate department chairperson or interdisciplinary program director within the first four weeks of the next regular academic semester. When a grade is assigned consistent with University policy, only the instructor has the right to change the grade except as provided in the *Incomplete* grade policy. When an instructor reports a grade change for a grade other than /, the Change of Grade Form must be signed by his/her Department Chair and College Dean.



Grades. Letters are used to designate the quality of student academic achievement.

UNDERGRADUATE GRADES

Letter	Meaning	Grade Points Per Semester Hour
A	Excellent	4
B	Good	3
C	Fair	2
D	Passing	1
F	Failing	0
I	Incomplete	*
IP	In Progress	*
W	Withdrawal	*
AU	Audit	*
NR	No recognition given	*

UNDERGRADUATE GRADES		
Letter	**Meaning**	**Grade Points Per Semester Hour**
	for audit	
	Cooperative Education	
S	Satisfactory	*
U	Unsatisfactory	*
	Pass/No Credit	
H	Honors	*
P	Passing	*
N	No Credit	*

** Not used in computation of grade point average*

Grade of *I* (Incomplete). The grade of *I* is assigned *at the discretion of the instructor* when a student who is otherwise passing has not, due to circumstances beyond his/her control, completed all the work in the course. The missing work must be completed by the deadline specified by the instructor, but no later than 12 months. If the *I* is not removed during the specified time, a grade of *F*, *U* or *N* as appropriate is automatically assigned. *The grade of I cannot be removed by enrolling again in the same course.*

Grade of *IP* (In Progress). The grade of *IP* is based on coursework for courses that extend over more than one semester. For example, a course that requires enrollment for two consecutive semesters would be eligible for an *IP* grade in the first term (i.e., Graduate Thesis, Undergraduate Senior Project, etc.) The grade in the second term is also awarded for the course in the first semester. A grade of *IP* should not be given for coursework to be completed in one given term. It cannot be substituted for a grade of *I*. The *IP* grade expires after six years, and if no final grade has been awarded by that time, the *IP* grade will default to a grade of *N* (no credit).

Grade of *W* (Withdrawal or Drop). No grade will be given for a course dropped on or before the last day to drop a course without record. After this period a student who is permitted to drop or withdraw from a course will receive a grade of *W*. Only students with such extenuating circumstances as serious illness will be permitted to drop a course after the tenth week of classes in the semester or to withdraw from all courses during the last two weeks of classes in the semester. Unsatisfactory academic performance itself is not an extenuating circumstance. The date of withdrawal is determined when the withdrawal form is accepted by the Office of the Registrar.

Pass/No Credit Option. Every student will be permitted during his/her *undergraduate* years to select a total of four courses in which he/she will be evaluated on a pass/no credit basis. Only one such course may be selected during an academic year. Every course in the University is offered on this basis *except* when taken by a student for departmental credit toward his/her major or minor or to satisfy University General Education requirements. Courses completed with the grade of Honors or Pass will count toward graduation, but they will not be considered in the computation of the grade point average.

This option is designed to encourage curiosity, exploration, and experimentation in areas where a student has strong interest but little or no previous experience. **Note:** Courses designated by the faculty to be graded only on a *Pass/No Credit* basis are not counted as part of this option. The student must declare his/her intention to take a *Pass/No Credit* option by the end of the eighth instructional day in the semester.

Grades for General Education Courses. A course taken to satisfy a General Education requirement must be graded *A, B, C, D, F* unless it is offered only with *Pass/No Credit* grading. The *Pass/No Credit* Option described above cannot be applied to General Education courses.

Repeating Courses. A student may receive credit for a course one time only, unless the course description specifies that it "may be repeated for credit." However, students can repeat a course to improve their GPAs under two different sets of conditions. In the first case, within the limits specified in the next paragraph, a student may replace a grade. This process is called "With Grade Replacement." In the second case, a student may repeat a course with the new grade averaging in with all others for this same course. This is specified in the second paragraph below as "Without Grade Replacement."

With Grade Replacement. Undergraduate students may replace up to two (2) courses (maximum of 8 hours) for grade replacement. Both grades will be reflected on the transcript. However, the higher of the two grades will be used in calculation of the GPA. This policy applies to courses first taken in Fall 2007 and thereafter. *(NOTE: Some courses in the College of Health and Human Services may not allow grade replacement.)* All courses for which a grade of A, B, C, D, or F may be assigned are eligible for grade replacement under this policy. The course to be replaced and the repeat course must have their grades assigned by UNC Charlotte. Students must file a completed "Grade Replacement Form" with the Office of the Registrar by the last day to drop a course with no record in the semester or summer session in which the course is to be repeated. A repeated course may not be selected retroactively to use this grade replacement policy. In classes for which the final grade assigned was an F or a D, the student may file the grade replacement form without further approval, providing it is within the course and hour limits specified in this policy. In classes for which the final grade assigned was a C or better, the student must obtain approval of the Department Chair and the College Dean of the student's program or major, and remain within the two-course, eight-hour limitations of this policy. Once a student has filed a grade replacement form for a

course, that choice cannot be revoked due to withdrawing from the class or from the University. [Medical or special circumstances may be reviewed on a case-by-case basis.] The original course grade will be the grade of record for the course and not the W. Any such withdrawal still consumes one of the two course substitutions permitted under this policy. Students enrolled in special topics classes for a grade replacement must enroll in the same topic for which they originally received the grade to be replaced. A grade received owing to an admitted or adjudicated academic dishonesty violation shall not be replaced if the course is repeated. This exception is not subject to appeal or academic petition.

Without Grade Replacement. In all courses which are not identified as being repeatable for additional credits, a student who has received a grade of C, H, P or better in a course may repeat that course only with prior approval of the student's advisor, department chair, and dean. An undergraduate student who received a D, F, or U in a course may repeat a course without seeking outside approval. All grades for repeated courses will be shown on the student's official transcript and be used in the calculation of the grade point average. For prerequisite purposes, the most recent grade will be used whether or not it is the highest.

Grade Point Average (GPA). The grade point average for an undergraduate student is determined by multiplying the number of grade points for each grade by the number of semester hours credit received in that course, adding all accumulated grade points together, and then dividing by the total number of semester hours the student has attempted, except those for which the student received a grade of *I, W, H, P, AU*, or *N*. In computing the grade point average, only those credits attempted at UNC Charlotte or through the Charlotte Area Educational Consortium are included.

Grade Point Deficit. The grade point deficit is the number of additional grade points required to bring a student's cumulative grade point average up to 2.0.

GPA Calculation / Grade Point Deficit. GPA is calculated by dividing quality points (QPTS) by quality hours (QHRS).

QPTS are determined by multiplying the number of quality points for each grade (A = 4, B = 3, C = 2, D = 1, F = 0) by the number of semester hours credit associated with that course.

QHRS are the total number of semester hours the student has attempted, except for those for which a grade of *I, W, P*, AU, or N is recorded.

GRADE POINT DEFICIT is the difference between the number of quality points a student has earned and the number necessary to yield a GPA of 2.00. (Number necessary to yield a GPA of 2.00 is equal to 2 times the number of QHRS.)

Example of GPA Calculation / Grade Point Deficit			
	GRD	QHRS	QPTS
ENGL 1101	B	3	9
MATH 1100	C	3	6
ESCI 1101	D	4	4
TOTALS		**10**	**19**

GPA = 19/10 = 1.90
QPTS necessary for 2.00 is 20 (2x10)
Grade point deficit = 1

ACADEMIC RECORDS AND TRANSCRIPTS

The Registrar is responsible for maintaining the official academic records for all students. Upon *written request by the student,* an official transcript of the academic record will be issued to the person or institution designated, provided that all the student's obligations to the University have been settled satisfactorily.

Each student is entitled to one transcript without cost, regardless of how early in his/her academic career the request is made. A fee of $5 per copy must accompany subsequent requests. Requests should reach the Office of the Registrar at least one week before the date the transcript is needed.

Currently, the Registrar cannot accept requests via email; however, the request form is available online at www.registrar.uncc.edu/students/trans.htm. Fax and mailing address information can be found there as well.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA) NOTIFICATION

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They are:

1.) The right to inspect and review the student's education records within 45 days of the day the University receives a request for access.

Students should submit to the Registrar, dean, chair of the academic department, or other appropriate official written requests that identify the record(s) they wish to inspect. The University official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.

2.) The right to request amendment of the student's education records that the student believes are inaccurate or misleading.

Students may ask the University to amend a record that they believe is inaccurate or misleading. They should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading.

If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

3.) The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.

One exception that permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic, research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

A school official has legitimate educational interest if the official needs to review an education record in order to fulfill his/her professional responsibility.

4.) The right to file a complaint with the U.S. Department of Education concerning alleged failures by UNC Charlotte to comply with the requirements of FERPA. The Office that administers FERPA is: Family Policy Compliance Office, U.S. Department of Education, 600 Independence Avenue, SW, Washington, DC, 20202.

UNC Charlotte intends to comply fully with these requirements. Policy Statement No. 69, "Student Records," explains the procedures for compliance. Students may obtain copies of the policy in the Office of the Registrar or online at www.legal.uncc.edu/policies/ps-69.html. Copies of the policy statement are also available for inspection in the offices of each dean and department chair. The policy includes a list of the locations of all education records maintained by the institution.

The following categories of personally identifiable information about students have been designated as public or **directory information** that may be disclosed for any purpose without student consent: name, local and permanent address, telephone number, email address, date and place of birth, class, major field of study, dates of attendance, enrollment status, degrees and awards (including scholarships) received, participation in officially recognized activities and sports, weight and height of members of an athletic team, and the most recent previous educational agency or institution attended.

Currently enrolled students may request that the University withhold disclosure of Directory Information by completing the appropriate form available in the Office of the Registrar. A request for non-disclosure will be honored by the University indefinitely, unless the student submits to the Registrar a written revocation of such request for non-disclosure.

All questions concerning this policy on educational records may be directed to the attention of the Registrar.

ACADEMIC STANDING

ACADEMIC HONORS

Chancellor's List. The Chancellor's List recognizes undergraduate students with outstanding records of academic performance. To qualify for the Chancellor's List during the fall or spring semester, a full-time student must earn a grade point average of at least 3.8 in 12 or more semester hours of credit graded *A, B,* or *C,* with no grade less than *C.* A part-time student must earn a combined fall and spring grade point average of at least 3.8 in 12 or more semester hours of credit graded *A, B,* or *C,* with no grade less than *C.* To qualify for the Chancellor's List as a part-time student, a student must enroll on a part-time basis in both fall and spring semesters in the same academic year. Students who receive the grade of *AU, H,* or *P* are not excluded from recognition as long as 12 hours are completed with *A, B,* or *C.* Students who receive the grade of *D, F, I, NR,* or *N* are not eligible for recognition. Chancellor's List recognition appears on the student's academic record (official transcript).

Dean's List. The Dean's List recognizes undergraduate students who earn a grade point average of at least 3.4 and not more than 3.79 and meet all other criteria as described for the Chancellor's List.

Commencement Marshals. At each commencement ceremony, the University honors the juniors with the highest grade point averages by inviting them to serve as the marshals who lead the processions of graduates, faculty members, and the platform party. To select students for this honor, the University considers juniors who have completed 75 hours of degree work, enrolled full-time (12 or more hours per semester) during the

two most recent semesters, and are able to attend the ceremony.

Graduation With Distinction. Students may earn undergraduate degrees at different levels of distinction: Cum Laude ("With Honor"), Magna Cum Laude ("With Great Honor"), and Summa Cum Laude ("With Highest Honor"). Each of the undergraduate degrees is awarded *Cum Laude* when the graduating student's cumulative grade point average is 3.4 or more but less than 3.80, *Magna Cum Laude* when it is at least 3.8 but less than 4.0, and *Summa Cum Laude* when it is 4.0. To be eligible to graduate with distinction, a student must have a grade point average computed on at least 48 semester hours of credit completed in residence at UNC Charlotte.

REQUIREMENTS FOR CONTINUED ENROLLMENT

Good Academic Standing. An undergraduate student must maintain a cumulative grade point average of 2.0 or above at UNC Charlotte to remain in good academic standing.

Academic Probation. An undergraduate student who has a grade point deficit between 1 and 13 is placed on academic probation, and this is noted on the student's academic record and grade report.

Academic Suspension. A student is suspended when either of the following apply: (1) the student has a grade point deficit of 14 or more **OR** (2) the student fails to achieve good standing by the end of two successive semesters (excluding summer sessions).

However, a student will not be suspended:

(1) who was in good standing at the end of the most recent regular semester (excluding summer sessions); **OR**
(2) who is finishing the first regular semester of enrollment (excluding summer sessions) at UNC Charlotte; **OR**
(3) who has a 2.5 GPA for the current semester (excluding summer sessions); **OR**
(4) who is readmitted after a break in UNC Charlotte enrollment of two calendar years or more.

Exception for Summer Enrollment. Students who are on academic suspension are permitted to enroll in summer session classes. They are not eligible to continue enrollment in the fall and spring semesters until they have applied and been approved for readmission.

READMISSION OF FORMER STUDENTS

A student who has been suspended or has not attended UNC Charlotte for 12 consecutive months must make application for readmission to the University prior to the semester or summer term for which registration is sought. Application should be filed at the Office of the Registrar in accordance with the published dates. Such students must meet the GPA and departmental progression requirements of the major in which they will return. Official transcripts from any institution attended during the student's absence from the University must be submitted prior to enrollment.

Associate Degree Rule. Students who leave UNC Charlotte and subsequently earn an Associate of Arts (AA), an Associate of Science (AS), or an Associate of Fine Arts (AFA) degree may apply for admission as transfer students and transfer a maximum of 64 semester hours, including hours from UNC Charlotte or other four-year institutions *applied to the Associate degree*. Students may be readmitted one time under either this Associate Degree Rule or the Two-Year Rule but not both.

Two-Year Rule for Undergraduate Students. Any undergraduate student who has not been enrolled at UNC Charlotte for a minimum period of 24 consecutive months is eligible for *one* readmission under the "Two-Year Rule." Students may be readmitted one time under either the Associate Degree Rule or the "Two-Year Rule" but not both. The "Two-Year Rule" will be applied automatically if the student is eligible. (Students electing not to have it applied may exercise this option by filing a form with the Registrar after consulting with their advisor.) Colleges and departments which have published admission or continued enrollment standards that are more restrictive than general University requirements retain the right to admit or to deny admission to a specific program.

If a student is readmitted under the provisions of the two-year rule, then only those courses for which the student has received a grade of *C* or better (or *H* or *P*) can be used for academic credit. His/her GPA will be based only on the courses that return with them and the work attempted after readmission. Eligibility for continued enrollment is determined as in the case of transfer students. To qualify for graduation with honors, a student must have a GPA computed on at least 48 hours taken in residence on which the UNC Charlotte GPA is based.

Second Baccalaureate Major/Additional Minor. Students who have earned a bachelor's degree from UNC Charlotte may apply for readmission into a program leading to a second major or to an additional minor. See requirements which follow.

Note. Readmission after suspension is not automatic. An application for readmission must be made and approved. *Included in the approval must be an acceptance from the Department in which the student would major. (See the section on Readmission of Former Students elsewhere in this catalog.)*

ACADEMIC SUSPENSION APPEAL PROCEDURES

Undergraduate students may appeal an academic suspension by submitting a written statement online to the Office of the Registrar at www.registrar.uncc.edu/students/susp.htm.

Other grievances relating to academic status are to be addressed by the college where the grievance arises or, if no particular college is appropriate, by the University Registrar.

Written procedures are available from the dean of each college and the Office of the Registrar. For additional information, see "Student Grievance Procedures" at www.legal.uncc.edu/StudentGrievanceProcedure.html.

TRANSFER CREDIT AND ADVANCED ACADEMIC STANDING

Evaluation of transfer credits, advanced standing, CLEP, AP, and IB are coordinated through the Office of Undergraduate Admissions. Prospective students who desire further information about policies and procedures for awarding credit should contact Undergraduate Admissions.

UNC Charlotte will accept appropriate undergraduate credits earned through AP, IB, CLEP, correspondence courses, extension courses, armed forces service schools, and college-level courses completed prior to graduation from high school. In addition, UNC Charlotte will accept or transfer appropriate undergraduate and graduate credits earned at another accredited institution or through credit by examination. Credit toward a degree is not awarded for Continuing Education Units (CEUs).

Advanced Placement Course Credit (AP). The University will accept appropriate undergraduate credits earned through Advanced Placement Program Tests completed prior to graduation from high school. Students must request that official Advanced Placement test results be sent directly to the Office of Undergraduate Admissions for evaluation (UNC Charlotte code-5105). Prospective students who desire further information about policies and procedures for awarding credit should contact the Office of Undergraduate Admissions. View score requirements at www.admissions.uncc.edu.

International Baccalaureate Program (IB). The University will award credit for subjects in which students score appropriate scores on the IB examinations. Contact the Office of Undergraduate Admissions for further information. View score requirements at www.admissions.uncc.edu.

College Level Examination Program (CLEP) General Examination. An undergraduate student may receive up to 23 semester hours of elective credit.

Subject Matter Examinations. Credit may be awarded for subject matter examinations listed below at the levels recommended in the current edition of *CLEP Scores: Interpretation and Use*:

Business
Information Systems and Computer Applications
Principles of Management
Introductory Accounting
Introductory Business Law
Principles of Marketing

Education
Introduction to Educational Psychology
Human Growth and Development

Foreign Language
College French I & II
College German I & II
College Spanish I & II

Humanities
American Literature
Analysis & Interpretation of Literature
College Composition (with Essay)
English Literature

Mathematics
Calculus w/Elementary Functions
College Algebra
College Algebra-Trigonometry
Trigonometry

Sciences
General Biology
General Chemistry

Social Sciences
American Government
American History I & II
Introduction to Psychology
Introduction to Macroeconomics
Introduction to Microeconomics
Introduction to Sociology
Western Civilization I & II

CLEP credit will be awarded according to UNC Charlotte policy in place at the time of evaluation. View score requirements at www.admissions.uncc.edu.

The amount of CLEP credit that is applicable to a specific degree program is determined by the Department offering the program.

Transfer Credit from Other Institutions. Transcripts are evaluated in the Admissions Office and the results are provided to the applicant and to the major department/ college. Determining the applicability of transferred credits to major or program requirements is the responsibility of the Department Chairperson or Program Director. General rules governing transfer credit:

1.) Only courses taken at a *regionally* accredited institution will be considered for transfer credit.
2.) *Provisional* transfer credit may be granted for study at foreign institutions or U.S. institutions that are not regionally accredited, but must be validated by 30 semester hours of successful performance in residence at UNC Charlotte.

3.) Courses for which credit is accepted must be appropriate for approved University programs and curricula in which the student is enrolled.
4.) Any course from an accredited institution that transfers as a course on the General Education list carrying the "IR" (initiation date retroactive indefinitely) notation will satisfy the goals for which the UNC Charlotte course is applicable. All restrictions that apply to UNC Charlotte courses apply to transfer courses.
5.) No credit below *C* level will be accepted; grade points and averages do *not* transfer.
6.) Transfer credit is awarded only upon receipt in the UNC Charlotte Office of Undergraduate Admissionse of an official transcript from the institution where the credit was earned.

Credit for Military Training. The University will approve academic credit for military training equivalent to UNC Charlotte courses required for the students' major, minor, or General Education requirements and up to three hours of elective credit. The credit must be approved by the student's major Department Chair, College Dean, and the Department that offers the course.

Documentation of the training, such as a license of completion or notation on the student's DD Form 214, is required. The same requirements apply to transfer or military training credit approved by another institution. Contact the Office of the Registrar for further information.

Credit from Two-Year Institutions. The University accepts a maximum of 64 semester hours of credit from two-year institutions for undergraduate students.

Transient Study. Courses undertaken by UNC Charlotte undergraduate degree students at other accredited institutions may be transferred to the University subject to the following regulations:

1.) The University is not obligated to accept any credit from another institution unless the student has obtained the *prior approval* of the dean of the college in which he/she is enrolled. A Permit for Transient Study form should be completed and filed in the UNC Charlotte Office of the Registrar prior to enrollment at another institution.
2.) No credit will be accepted for courses below *C* level for undergraduate students or below *B* level for graduate students.
3.) The student must request that an official transcript be mailed to the Office of the Registrar upon completion of the course. A form for this purpose is available in the Office of the Registrar.
4.) College of Arts and Sciences students are not permitted to take courses at another educational institution in the fall or spring semester if they are enrolled full-time (12 credits or more) at UNC Charlotte in the same semester unless it is a course not offered at UNC Charlotte (e.g., American Sign Language).

Credit by Examination. A student currently enrolled at UNC Charlotte may pass a specially prepared challenge examination and receive credit for a University course without having to do the normal course work. The student contacts the Chair of the Department in which credit is sought to request administration of an examination. Since it may not be appropriate to award credit by examination for some courses, the decision to offer an examination is that of the Department. If the Chair authorizes an examination, the student is instructed to pay the required fee for credit by examination and to bring the receipt of payment to the examination. Hours earned through credit by examination will be indicated on the transcript, but no grade points will be awarded. Hours attempted will be assigned equal to the hours earned. Failure on such an examination will incur no grade point penalty or hours attempted. A department may allow a student to take examinations for courses not offered at UNC Charlotte, if it deems it appropriate to do so. No student may challenge a course for which either a passing or failing grade has been received at UNC Charlotte.

GRADUATION

Application for the Degree. Each student should make application for his/her degree no later than the filing date specified in the academic calendar. The application may be submitted through the Registrar's web page at www.registrar.uncc.edu. The fee for graduation is $35. Degrees are awarded at commencement exercises held at the end of the Fall and Spring semesters; however, the diploma and transcript will reflect the term in which all requirements were completed.

Students completing their degree requirements in May participate in the May ceremony. Students completing degrees in a summer term, as well as those completing in December, participate in the December ceremony.

Teacher Licensure. Students who have completed degree requirements and obtained passing scores on appropriate exit tests (e.g., Principles of Teaching and Learning, Praxis II Subject Assessments) must apply for licensure through the Office of Student Academic Services (OSAS) in the College of Education. OSAS will process and submit application packets including Praxis scores, final transcripts, and required fees to the North Carolina Department of Public Instruction (NCDPI). Licenses are mailed directly to applicants by NCDPI.

BACCALAUREATE DEGREE REQUIREMENTS

Credit Hours. The baccalaureate degrees require completion of 120-128 semester hours of credit, including all requirements for a major field of study. Specific requirements for degrees and programs are presented under each College Department's section of this *Catalog*.

Residence. A student must earn the last 25% of baccalaureate degree requirements at UNC Charlotte, including the last 12 semester hours of work in the major field and at least six hours of any minor field of study. Exceptions to these hour provisions may be made upon the recommendation of the student's major department and with the approval of the dean of the college of the student's major.

Coursework taken in residence shall be construed to mean work offered by UNC Charlotte and taken in courses on the UNC Charlotte campus or at an approved off-campus center. Credit earned by challenge examinations or other advanced standing examinations cannot be used to meet the residence requirement.

Grade Point Averages. To graduate, a student must have an overall grade point average of at least 2.0 and a grade point average of at least 2.0 in the major and in any minor. Some programs require a higher grade point average. See your major's section of this *Catalog* for details.

Course Levels. Junior and senior students are required to have the permission of the major department to enroll in any course below the 3000 level not required in their degree program.

General Education. All baccalaureate degrees at UNC Charlotte include a common set of General Education requirements.

Requests for Exceptions. Requests for exceptions to any aspects of the General Education requirements for individual students must be approved by the Associate Dean of the College of Arts and Sciences. Such exceptions may be requested by completing an Academic Petition, including recommendations of approval by the student's Advisor, Professor (if applicable to a course), Department Chair, and College Dean, and submitting it to the Office of the Registrar.

GENERAL EDUCATION PROGRAM

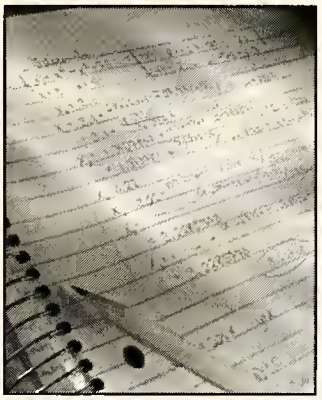
www.gened.uncc.edu

The General Education Program is central to UNC Charlotte's basic mission of providing all of its undergraduates with a liberal arts education. The Program approaches the liberal arts in its traditional meaning of learning the arts appropriate for living the educated, responsible life of a free (*liberalis*) citizen. It provides all undergraduate students, regardless of their majors, with the foundations of the liberal education they will need to be informed people who have the ability to act thoughtfully in society, the ability to make critical judgments, and the ability to enjoy a life dedicated to learning and the pleasures of intellectual and artistic pursuits.

The Program is designed to address four areas of liberal education. First, it helps students develop the foundational skills necessary for obtaining the full benefits of a college education: basic college-level writing, basic use of information technology, and basic college-level mathematical and logical skills. Second, it helps provide students with an understanding of the methods of scientific inquiry and the ways that knowledge is acquired and accredited in the life sciences, physical sciences, and social sciences. Third, the General Education Program addresses major themes related to living as a liberally educated person in the twenty-first century. Students take four Liberal Studies courses designed especially for the General Education Program. These courses are organized around major themes of liberal education: the arts, literature, the Western cultural tradition, global understanding, citizenship, ethics, issues of health, and issues of science, technology, and society. Fourth, it helps students develop more specialized skills for disciplinary writing and oral presentations.

I. DEVELOPMENT OF FUNDAMENTAL SKILLS OF INQUIRY (9-12 HOURS)

First-year writing courses: Students take two courses, ENGL 1101 and ENGL 1102. Entering freshmen who qualify for the accelerated course in writing and rhetoric may meet this requirement by completing one course, ENGL 1103. After completing these courses students are expected to be able to write clearly and concisely in standard English and to be generally prepared to do college-level writing and editing.



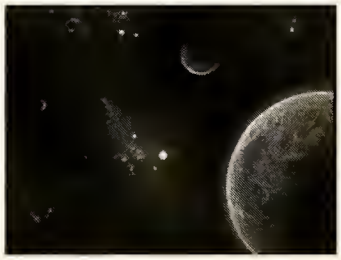
Mathematical and logical reasoning: One course in mathematics (MATH) and a second course selected from mathematics (MATH), statistics (STAT), or deductive logic (PHIL 2105). Most undergraduates at UNC Charlotte major in programs that require mathematics or statistics as related work. For these students, the related mathematics requirements determine the courses taken to meet the general education requirement. Students in majors that do not require related work in mathematics normally take MATH 1100, followed by either MATH 1102 or PHIL 2105.

Basic skills of information technology: By the end of their first semester at UNC Charlotte, students are

expected to have developed the basic skills necessary to access and create computer based information. These skills include the use of word processing, email, file management, Internet searches, and library database searches. These skills are developed in English 1101 and 1103. Tutorial help is available at campus computer labs, and help with bibliographical search skills is available in the information commons of Atkins library. Students are expected to exhibit ethical behavior in the use of computers. More advanced information technology skills are required by individual departments and majors.

II. INQUIRY IN THE SCIENCES (10 HOURS)

Two courses, at least one of which must be taken with a laboratory, in the life sciences and/or the physical sciences. These courses introduce students to the various methods of life sciences and physical sciences. They provide an understanding of the current scientific knowledge of the world, how that knowledge is secured, and how scientific knowledge changes over time. Selected from:



Astronomy (PHYS 1130)
Biological Anthropology (ANTH 2141)
Biology (BIOL 1110, 1115, 1273, 1274)
Chemistry (CHEM 1111, 1112, 1203, 1204, 1251, 1252)
Earth Sciences (ESCI 1101)
Geology (GEOL 1200, 1210)
Physics (PHYS 1101, 1102, 1201, 2101, 2102)
Psychology (PSYC 1101)

One course in the social sciences. These courses introduce students to the methods of the social sciences and to the applications of these methods for gaining a scientific understanding of the social world. Selected from:

Anthropology (ANTH 1101)
Geography (GEOG 1105)
Economics (ECON 1101 or 2101)
Political Science (POLS 1110)
Sociology (SOCY 1101)

III. THEMES OF LIBERAL EDUCATION FOR PRIVATE AND PUBLIC LIFE (12 HOURS)

The UNC Charlotte faculty has selected eight themes of a liberal arts education around which to offer a core of Liberal Studies courses dedicated exclusively to general education. All of these courses include the consideration of gender, race, and ethnic diversity, as appropriate for understanding the individual themes of these courses.

Each student must take four of these courses as follows:

One course in the Arts and Society. Art is indispensable to the structure and fabric of all societies, and each course examines this fundamental connection from the perspective of a specific art form. Selected from:

LBST 1101 The Arts and Society: Dance
LBST 1102 The Arts and Society: Film
LBST 1103 The Arts and Society: Music
LBST 1104 The Arts and Society: Theater
LBST 1105 The Arts and Society: Visual Arts

One course in the Western Tradition. Each section of this course examines a major aspect of Western culture through the process of analyzing the present in terms of the past.

LBST 2101 Western Cultural & Historical Awareness

One course in Global Understanding. All liberally educated people need to have the ability to understand the world from the point of view of more than one culture and be able to analyze issues from a global perspective.

LBST 2102 Global and Intercultural Connections

One course dealing with Ethical Issues and Cultural Critique. Each of these courses deals with an important contemporary issue, and each one gives significant attention to ethical analysis and cultural critique in the liberal arts. Selected from:

LBST 2211 Ethical Issues in Personal, Professional, and Public Life
LBST 2212 Literature and Culture
LBST 2213 Science, Technology, and Society
LBST 2214 Issues of Health and Quality of Life
LBST 2215 Citizenship

IV. COMMUNICATION SKILLS

Writing in the disciplines. SIX SEMESTER HOURS, INCLUDING AT LEAST THREE SEMESTER HOURS IN THE MAJOR. These courses are spread throughout the curriculum and are indicated with a (W) after the course title. These courses assume that students have already developed the basic grammatical and compositional skills needed to write college-level English, and they build on these skills to develop writing strategies appropriate to the discipline of the department offering the course.

Oral communication. AT LEAST ONE COURSE DESIGNATED AS AN ORAL COMMUNICATION COURSE. These courses are spread throughout the curriculum and are indicated with an (O) after the course title. If a course is designated as both a writing in the discipline course (W) and an oral communication course (O), a student may apply that course to both requirements.

Foreign languages. There are no foreign language requirements associated with the General Education Program. Requirements related to foreign languages

are determined at the college or department levels. The College of Arts and Sciences, the College of Architecture, and the College of Health and Human Services all have a foreign language requirement. The foreign language requirement for the College of Arts and Sciences is listed below. The requirements for the College of Architecture and the College of Health and Human Services are listed under each college's section in the *Catalog*.

All students who earn an undergraduate degree within the *College of Arts and Sciences* are required to

demonstrate proficiency in the language of their choice through the 1202 level. Proficiency can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same foreign language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) by transferring in with an A.A., A.S. or A.F.A. degree; or (6) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

This requirement applies to all students entering any degree program within the College of Arts and Sciences Fall 2005 and beyond. Students enrolled in the University prior to Fall 2005 but not enrolled in a degree program in the College of Arts and Sciences Fall 2005 and beyond will be subject to this requirement.

Although all students in the College of Arts and Sciences are subject to the 1202 proficiency requirement, students in selected departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. All students in the College of Arts and Sciences should consult with their major department to determine whether or not they are required to complete the intermediate proficiency requirement as part of their major or related coursework.

Transfer of General Education Equivalent Courses. Students may meet any of the course requirements of the General Education Program with approved equivalent courses transferred from other institutions. At the time of admission, transcripts of work at other institutions are evaluated to determine equivalency. This includes equivalency for the Liberal Studies courses required in the General Education Program.

Transfer Students Who Are Exempt from the Lower Division General Education Requirements. Some transfer students are exempt from the lower division General Education requirements. The following groups of transfer students who enter the University in the fall of 2003 or thereafter will have met the University's lower division, general education requirements:

- Students with A.A., A.S., or A.F.A. degrees;
- Students with A.A.S. degrees in a transferable or 2 + 2 program. ***Note:*** *Students must major in the program in which their A.A.S. degree is transferable. If students change major, then they will lose the exemption benefit.*
- Students who have met the academic core of the North Carolina Comprehensive Articulation Agreement from a NC community college.

That is, they will not have to take additional lower division courses to meet General Education requirements. They will still have to take a writing intensive course in their major and foreign language classes if required in their major.

Financial Information

Student Expenses and Fee Payment

Charges for tuition and fees vary according to the student's status as a resident or nonresident of North Carolina. A nonresident student pays a higher rate of tuition than a legal resident.

The University reserves the right, with the approval of proper authorities, to make changes in tuition and fees at any time. The University also reserves the right to correct any clerical errors on a student's account.

Student Expenses. Graduate students taking nine or more semester hours and undergraduate students taking 12 or more semester hours during a regular semester will be charged full tuition and fees. Students taking fewer than the nine hours for graduate study and 12 hours for undergraduate study will be charged a prorated portion of tuition and fees as specified in the fee schedules in this *Catalog*.

Costs of tuition and fees for the regular academic year for a typical full-time North Carolina undergraduate student for 2006-2007 were $3,899 and for a typical out-of-state student, $14,311. The costs of housing and dining for the academic year were $5,340 to $7,796, depending on the options chosen.

The estimated average cost of books and supplies per semester varies by area and level of study and ranges from $450 to $550. Beginning students in architecture and engineering should allow an additional expense of $200 to $300 for drawing instruments, calculator and supplies. Uniforms and supplies for nurses cost approximately $450.

In addition to the above, the student should take into consideration the cost of clothing, snacks, recreation, laundry, transportation, etc., in planning his/her expenses for each semester.

Fee Payment. Tuition and fees are due and payable by the date specified on the bill. Advance registration billing and due dates of fees vary with the term. Checks and money orders should be made payable to UNC Charlotte. Visa and MasterCard are accepted. Payments by credit card may be made online through 49er Express/Self-Service.

UNC Charlotte has partnered with AMS, a top national lender of student loans, to offer a wide range of options to pay for college. Students may view these options online at www.amsweb.com to select the loan combination that best meets their needs. Installment payment options can be found online at www.tuitionpay.com.

Returned Check Policy. If a check is returned by the bank, a letter is sent to the maker indicating that a penalty of $25 has been assessed and the account must be settled within 10 working days or the check will be considered to be a bad check and be processed accordingly. A hold will be placed on the student's record until the bad check is covered and the penalty is paid.

A student who pays a previous balance with a check in order to have a registration hold flag lifted will have their registration cancelled if the check is returned by the bank for any reason.

RESIDENCE STATUS FOR TUITION PURPOSES

Tuition charges are based upon classification of a student as a resident or a nonresident of North Carolina for tuition purposes. UNC Charlotte shall determine whether a student is a resident or a nonresident for

tuition purposes in accordance with North Carolina General Statutes that are summarized below. A more complete explanation of the statute and the procedures are contained in *A Manual to Assist the Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes*. Copies of the *Manual* are available for inspection in the Library and the admitting offices.

Residence. Generally, in order to qualify as a resident for tuition purposes, a person must be a legal resident of North Carolina AND must have been domiciled in North Carolina for at least twelve (12) months immediately prior to classification as a resident for tuition purposes. In order to be eligible for such classification, the person must establish that his or her presence in the state during such twelve-month period was for purposes of maintaining a bona fide domicile rather than for purposes of mere temporary residence incident to enrollment in an institution of higher education. Legal residence is accomplished by maintaining a bona fide domicile of indefinite duration as opposed to maintaining a mere temporary residence incident to enrollment at an institution of higher education.

Initiative and Proof of Status. A student is responsible for seeking classification as a resident for tuition purposes. A student must (1) provide all of the information UNC Charlotte requires for consideration of residence classification and (2) establish facts that justify classification as a resident for tuition purposes.

Parents' Domicile. If a dependent student has living parents(s) or a court-appointed guardian who maintain bona fide domicile in North Carolina, this fact shall be prima facie evidence that the student is also domiciled in North Carolina. **This primary proof of the student's legal residence may be supported or rebutted by other information.**

If a student's parent(s) or guardian are domiciled outside of North Carolina, this fact shall be prima facie evidence that the student is also not domiciled in North Carolina, unless the student has lived in North Carolina for the five years preceding enrollment or re-registration at UNC Charlotte.

Effect of Marriage. A person does not automatically obtain North Carolina domicile solely by marrying a North Carolina resident. If both spouses have established a North Carolina domicile and one spouse has been a domiciliary longer than the other, the member of the couple who has the shorter duration of domicile may borrow his/her spouse's duration of domicile to meet the 12-month requirement. However, the two durations cannot be added together to meet the 12-month requirement.

Military Personnel. A North Carolinian who serves outside the State in the armed forces does not lose North Carolina domicile and thus North Carolina legal residence simply by reason of such service. Students in the military may prove retention or establishment of legal residence by reference to residentiary acts accompanied by residentiary intent.

In addition, North Carolina General Statutes provide tuition rate benefits to certain military personnel and their dependents who do not otherwise qualify for the in-state tuition rate. Members of the armed services, while stationed in and concurrently living in North Carolina, may be charged a tuition rate lower than the out-of-state tuition rate to the extent that the total of entitlements for applicable tuition costs available from the federal government, plus certain amounts calculated by reference to a North Carolina statutory formula, is a sum less than the out-of-state tuition rate for the applicable enrollment.

A dependent relative of a service member stationed in North Carolina shall be charged the in-state tuition rate while the dependent relative is living in North Carolina with the service member. Under this provision, the dependent relative must comply with any applicable requirements of the Selective Service System.

Tuition benefits based on military service may be enjoyed only if requirements for admission to UNC Charlotte have been met. The military service tuition statute does not qualify a person for or provide the basis for receiving derivative benefits under other tuition statutes.

Grace Period. If a student (1) is a legal resident of North Carolina, (2) has consequently been classified a resident for tuition purposes, and (3) has subsequently lost North Carolina legal residence while enrolled at UNC Charlotte, the student may continue to enjoy the in-state tuition rate for a grace period of 12 months measured from the date the student lost his or her status as a legal resident. If the 12 month grace period ends during an academic term in which the student is enrolled at UNC Charlotte, the grace period extends to the end of that term. Marriage to one domiciled outside of North Carolina does not, by itself, cause loss of legal residence, marking the beginning of the grace period.

Minors. Minors (persons under 18 years of age) usually have the domicile and thus the legal residence of their parents. If a minor's parents live apart, a minor's domicile is presumed to be the domicile of the father. This presumption may be rebutted by other information in the case of divorce, legal separation, a deceased parent or a minor living with neither parent. Certain specific cases are recognized in determining residence for tuition purposes.

(a) If a minor's parents live apart, the minor's legal residence is deemed to be North Carolina for the time period(s) that either parent, as a legal resident of North Carolina, may claim and does claim the minor as a tax

dependent. Under this provision, a minor deemed to be a legal resident will not, upon turning eighteen before enrolling at an institution of higher education, lose North Carolina legal residence if he or she (1) acts in a manner consistent with bona fide legal residence in North Carolina and (2) begins enrollment at UNC Charlotte no later than the fall academic term immediately following completion of education prerequisite to admission at UNC Charlotte.

(b) If a minor has lived for five or more consecutive years with relatives (other than parents) who are domiciled in North Carolina and if the relatives have functioned during this time as if they were personal guardians, the minor will be deemed a resident for tuition purposes for the enrolled term commencing immediately after the five years in which these circumstances have existed. Under this provision, a minor deemed to be a resident for tuition purposes immediately prior to his or her eighteenth birthday will be deemed a legal resident of North Carolina for the required 12 month period when he or she turns eighteen; provided he or she does not abandon North Carolina legal residence.

Lost but Regained Legal Residence. If a student ceases enrollment at or graduates from UNC Charlotte while classified a resident for tuition purposes and then abandons and reestablishes North Carolina legal residence within a 12-month period, that student shall be permitted to re-enroll at UNC Charlotte as a resident for tuition purposes without meeting the 12-month durational requirement. Under this provision, the student maintains the reestablished legal residence through the beginning of the academic term for which in-state tuition status is sought. A student may receive the benefit of this provision only once.

Change of Status. A student accepted for initial enrollment at UNC Charlotte or permitted to re-enroll following an absence from the institutional program that involved a formal withdrawal from enrollment will be classified by the admitting institution either as a resident or as a nonresident for tuition purposes prior to actual enrollment. A residence status classification once assigned (and finalized pursuant to any appeal properly taken) may be changed thereafter (with corresponding change in billing rates) only at intervals corresponding with the established primary divisions of the academic year.

Transfer Students. When a student transfers from one institution of higher education to another, he or she is treated as a new student and must be assigned an initial residence classification for tuition purposes.

Appeal Procedure. A newly admitted student or continuing student who has been classified as a non-resident for tuition purposes may request further consideration of that decision by the UNC Charlotte Residence Status Appeals Board (RSAB) pursuant to the "Policy and Procedures for Determining Residence Status for Tuition Purposes for Undergraduate Students." This request must be in writing to the UNC Charlotte Residency Specialist and must be submitted within ten days from the date of the issuance of the letter of determination. The request may consist simply of the statement, "I wish to appeal the decision as to my residence classification for tuition purposes." It must be dated and signed and should indicate the applicant's UNC Charlotte student identification number and mailing address.

Tuition and Fees Per Semester

www.finance.uncc.edu/tuition_and_fees.htm

Following are the tuition and fees that were **authorized for 2006-2007**. (At press time, the tuition and fees for 2007-2009 had not yet been released.) Tuition and fees are subject to change by the appropriate authorities.

UNDERGRADUATES		
Hours	**Resident**	**Non-Resident**
1-5 Hrs.	$526.40	$1827.90
6-8 Hrs.	$1025.75	$3628.75
9-11 Hrs.	$1656.50	$5561.00
12+ Hrs.	$1949.50	$7155.50

Post-baccalaureate students who are taking **only** undergraduate courses will pay tuition and fees at the undergraduate rate. Post-baccalaureate students taking one or more graduate credit courses will pay tuition and fees at the graduate rate for **all** courses.

The following Student Activities Fees are included in the **full-time** tuition and fee amounts for 2006-2007. Fees for part-time students are less and vary according to the number of hours per semester taken.

STUDENT ACTIVITY FEES	
Activity	**Fee**
Administrative Computing	$26.50
Association of Student Governments	0.50
Athletic	212.50
Cone Center Facilities	14.00
Cone Center Operating	69.50
Educational and Technology	103.50
Health Center Facility	12.50
Health Center Services	72.00
Intramural	19.50

Recreational Facility	6.50
Recreational Facilities Maintenance	8.00
Student Activity Center (SAC)	65.00
Student Activity Center (SAC) Operations	65.50
Student Fee Commission	25.00
Student I.D. (49er Card)	2.00
Student Union Facility	75.00
Total Fees Per Full-Time Student, Per Semester	**$777.50**

Shared Residence Hall space is **not** available to married students and/or their family members. The below figures are **2006-2007** prices and plans per semester. *Prices and plans are subject to change. Additional fees apply to Internet connectivity, phone service, cable TV, the Miner Movies Channel, and RSA Membership.* Updated pricing can be found online at : www.housing.uncc.edu/assignments/asg_rates.htm.

HOUSING PER SEMESTER	
Type	**Fee**
Apartment	$1,857 - $2,232
Greek Village	$2318
Highrise/Residence Hall – Double Room	$1,470
Highrise/Residence Hall – Single Room *(if available)*	$2,153
Suite	$1,782 - $2,217

The following **2006-2007** options are available to freshmen living in housing areas that require meal plans. *Prices and plans are subject to change.* Updated pricing and additional information can be found online at :

www.auxiliary.uncc.edu/dining/Meal Plan.htm

DINING SERVICES PER SEMESTER	
Plans	**Fee**
19 meals per week with $100	$1,485
14 meals per week with $200 declining balance	1,485
12 meals per week with $300 declining balance	1,580
10 meals per week with $400 declining balance	1,580
150 block plan with $100 declining balance	1,265
Upperclassmen living in housing areas that require purchase of a meal plan may select one of the plans listed above or one of the following:	
125 block plan with $175 declining balance	$1,200
Declining Balance Account	$1,000 or $1,410
Students living in on-campus apartments and commuter students may select the following meal plan or any of those above:	
Declining balance account	$500

Any student may purchase or add additional Optional Dining Account funds to their 49er ID card. Account balances can be checked or have funds added to it by visiting the 49er Card Office, located in the Auxiliary Services Building, or in the ID/Dining Services Office, located in the Cone University Center, or online at https://uncc49ercard.blackboard.com.

During the academic year of **2006-2007**, the following special assessments were charged to cover the cost of supplies or special materials:

SPECIAL ASSESSMENTS PER SEMESTER	
Type	**Fee**
Administrative Cancellation Fee	$75
College of Architecture Student Fee	$40
College of Computing & Informatics Student Fee 1-7 hours 8 hours or more	 $38 $75
College of Engineering Student Fee 1-7 hours 8 hours or more	 $50 $100
Nursing Course (Evolve/HESI test) Fee (NURS 3240 and 4450)	$45
Scuba Diving (KNES 2219)	$60
Advanced Scuba Diving (KNES 2220)	$35
Applied Music Fee (1 credit hour)	$45
Applied Music Fee (2 credit hours)	$90
Teacher Licensure Fee	$30
Co-op/49ership Fee (per semester of co-op enrollment)	$60
International Student Fee	$50

Application Fee. A $55 application fee must be submitted with the application for admission. The fee is nondeductible and nonrefundable.

Housing Deposit. Admission to UNC Charlotte does not guarantee residence hall space. Arrangements for on-campus housing are made, after admission, with the Director of Housing and Residence Life. Residence Hall space is not available to families or children of enrolled students.

A $100 deposit must be submitted with all housing contracts. The deposit is not applied toward payment of fees. It is refunded only after the student has left on-

campus housing and only if the student has met all financial obligations to the University. In the case of contract cancellation, the date of receipt of the written request for cancellation will determine, in part, the student's financial obligation to the University (please see the Housing Contract for the current academic year for specific cancellation dates).

Student Activities Fee. A part of the general fee provides students with a program of cultural, recreational, and entertainment activities. It pays for admission to many athletic contests, dramatic productions, activities sponsored by the University Program Board, social and entertainment functions, and for subscriptions to the campus newspaper and literary magazine.

Graduation Fee. Each member of the graduating class must pay a graduation fee of $35 at the time he/she applies for the degree. This fee includes the cost of the diploma and the cap and gown. No reduction of the fee is allowed for those receiving degrees *in absentia*.

Credit By Examination Fee. A written examination for a course will require a fee of $15. A laboratory examination requiring the arrangement of such things as laboratory materials will require a fee of $25. A combination of a laboratory and written examination will require a fee of $30.

Tuition Surcharge. Undergraduate students who take more than 140 credit hours (or more than 110 percent of the hours required to complete their baccalaureate degree program) are subject to a 25 percent tuition surcharge on the excess hours taken. However, the surcharge will not apply to students who exceed these credit hour limits while completing their degree within the equivalent of four academic years, or in the case of five-year programs, within the equivalent of five academic years. Finally, the surcharge does not apply to students who entered the University before Fall 1994.

MOTOR VEHICLE REGISTRATION FEES

www.parking.uncc.edu

Students attending UNC Charlotte are required to register their motor vehicle(s) in order to park on campus; there is no free parking. Vehicle registration for fall and spring semesters begins two weeks prior to the first day of classes. Students may check the Parking & Transportation Services website for updates or changes to this policy. Payment must be received before the permit is issued or mailed. **Permits are required beginning at 8 a.m. on the first day of classes.** For students, two categories of permits are issued: *Resident* (for students living on-campus) and *Commuter* (for students living off-campus).

Permits sold in August are good for one year. Students who graduate in December may return their parking permit for a pro-rated refund. The price of the permit is the same for faculty, staff and students. For 2006-2007, the annual rate for a resident or commuter student was $265. **Please reference www.parking.uncc.edu for current fees for your academic year.** Parking Services receives no state funding; therefore, parking fees are used to defray construction and operating expenses.

Night permits, valid only after 3 p.m., are sold at a reduced rate using the same schedule as the regular student permits. Students with night permits who come on campus before that time must park and pay at the meters or in visitors' spaces.

Penalties for Parking Violations. Violators of University parking regulations are subject to monetary penalties ranging from $10 to $100, depending on the severity of the violation. Copies of parking regulations are distributed with the parking permit. Additionally, citations enforced and penalties assessed can be found online at www.parking.uncc.edu/cit.htm. If a citation is not paid or appealed within 10 days, the penalty will be applied to the student's account with the University. Subsequent registration may be withheld for non-payment. Parking citations are issued 24 hours a day. Permits and meters are enforced from 8 a.m. until midnight, Monday through Thursday, and from 8 a.m. until 3 p.m. on Friday.

Questions concerning parking on campus should be directed to Parking & Transportation Services, which is open from 8 a.m. - 5 p.m., Monday through Friday. Emergency situations and questions at other times should be directed to (704) 687-2200.

Refunds

A student who officially withdraws from the University in the fall or spring semester will receive a refund as follows:

TUITION AND FEES REFUNDS

Period of Withdrawal	Percent of Tuition and Fees Refunded
Before 1st Class Day	100%
Period 1*	100% minus $25 withdrawal fee
Period 2*	100% minus $75 withdrawal fee
Period 3*	80%
Period 4*	75%
Period 5*	70%
Period 6*	60%
Period 7*	55%
Period 8*	50%
Period 9*	40%
After Last Period*	0%

**Generally, each period is one week in length; however, for specific dates of each period, please visit the Refunds Schedule located online under www.finance.uncc.edu/Tuition_and_Fees.htm.*

Summer School. Summer School refund schedules are reviewed and revised annually based upon the Summer School calendar. See www.summer.uncc.edu for the refund schedule for the current sessions.

Exceptions. Charges are refundable by administrative action on a prorated basis for the unexpired portion of the term for the following reasons: death of the student, withdrawal for adequate medical reason as certified by the University Student Health Center or family doctor, death in the immediate family that necessitates student withdrawal, and dismissal or suspension from school. Immediate family is defined as wife, husband, parent, child, brother, sister, grandparent, and grandchildren and includes step-, half- and in-law relationships. Appropriate documentation must be submitted to the Dean of Students.

No refunds will be given to students who are withdrawn by administrative action for failure to comply with the North Carolina immunization laws.

Appeal Procedure. Sometimes a student experiences extenuating circumstances that warrants consideration of a refund. The *Appeal for Tuition, Housing, and Dining Refund Form* can be found online at www.finance.uncc.edu/Tuition_and_Fees.htm. The Registrar's Office, Student Account's Office, Housing, and other offices must then research the request thoroughly. In some cases, the appeal for a refund must be forwarded to the Tuition, Housing, and Dining Appeals Committee. If the request must be forwarded to the Committee, the student will be notified of the date and time of the meeting and offered the option to present the request in person. Once a decision has been made regarding the appeal, the student will be notified by mail.

The contract period for academic-year housing contracts is the entire academic year (Fall and Spring semesters). The student and/or guarantor agree to pay the full amount of charges for residential services. To cancel residential services, the student and/or guarantor must send a signed written request for cancellation of the contract to the Housing and Residence Life Office or submit a request online at www.housing.uncc.edu. The date of receipt of the written request for cancellation will determine, in part, the student's financial obligation to the University (please see the Housing Contract for the current academic year for specific cancellation dates). If, during the time of the Contract, the student loses the right to live in University housing by reason of disciplinary action, or breach of the Contract, no refund of housing charges for the term will be made.

Summer School. The contract period for Summer School coincides with each term of the Summer School calendar; housing charges are refundable based upon the number of weeks of occupancy.

Financial Aid

www.uncc.edu/finaid

UNC Charlotte administers financial aid without regard to race, color, national origin, religion, sex, sexual orientation, age, or disability.

The University offers a comprehensive program of student financial aid (scholarships, grants, loans, and part-time employment) to assist both graduate and undergraduate students in meeting educational expenses. Reasonable educational expenses include tuition and fees, room and board, books, supplies, transportation, miscellaneous personal expenses, and expenses related to maintenance of a student's dependents.

ELIGIBILITY

The programs of student financial aid are administered according to a nationally accepted policy that the family, meaning parents (or those acting in place of parents) and/or spouse, is responsible for a student's educational expenses. Therefore, eligibility for financial aid will be determined by a comparison of a budget (educational expenses as defined above) for the period of attendance with what the student's family can reasonably be expected to contribute.

A financial aid applicant will be considered for available assistance for which he/she is eligible if the student:

1. Completes the application process and related forms only after thoroughly reading all instructions.
2. Completes the admission application process and is accepted for enrollment at UNC Charlotte.
3. Is working toward a degree and not simply taking courses.

APPLICATION PROCESS

To apply for the following programs, a student must complete the **Free Application for Federal Student Aid** using the instructions provided online at www.fafsa.ed.gov.

- Federal Stafford Student Loans
- Federal Pell Grant*
- Federal Perkins Loan
- Federal Supplemental Educational Opportunity Grant*
- Federal Academic Competitiveness Grant*
- National SMART Grant*
- Federal Work Study
- N.C. Student Incentive Grant*
- UNC Need Based Grants*
- NC Education Lottery Scholarships*

- University Grants
- University Loans
- University Need-Based Scholarships

* *For undergraduate students only*

RENEWAL PROCESS

Renewal of financial aid is based upon a student's making satisfactory academic progress. The Free Application for Federal Student Aid is required each year that a student applies for financial aid.

FINANCIAL AID PROGRAMS

LOANS

- *Federal Perkins Loan*--Loans of up to $4,000 per year are made to students with the highest financial needs who apply by the University's established priority date of April 1. The interest rate is five percent with repayment beginning nine months after graduation.

- *Federal Stafford Loans*--Qualified undergraduate applicants may borrow up to $3,500 for the first year, $4,500 for the second year, and up to $5,500 per year for the remainder of undergraduate study. Graduate students may borrow up to $8,500 per year. Independent students may be eligible to receive additional loan amounts. The interest rate is 6.8 percent, and repayment begins six months after the borrower ceases to be a student.

- *Short-Term Emergency Loans*--Students may borrow up to $300 for unanticipated expenses that occur during the semester and up to $1,000 for tuition expenses. Loans have no interest and must be repaid within 30 to 60 days. Funds for these loans are provided by private donation.

GRANTS

- *Federal Pell Grants*--These are for undergraduate students and can range from $400 to approximately $4,300, based on the student's financial need. It is an entitlement program, meaning that any student who applies and is determined to be eligible will receive funds.

- *Federal Supplemental Educational Opportunity Grants*--These are for undergraduate students and range from $200 to $1,000. Eligibility is based on financial need and is determined within the UNC Charlotte Financial Aid Office, with priority to lowest income students who apply by the University's priority date of April 1.

- *Federal Academic Competitiveness Grants* – These are for undergraduate students in the first or second year of study who graduated from a high school rigorous program of study after January 1, 2005. The awards range from $750 to $1400 and are restricted to those students eligible for a Federal Pell Grant.

- *National SMART Grants* – These are for undergraduate students in the third or fourth year of study in specific majors. The $4000 awards are also restricted to Federal Pell Grant recipients with a minimum 3.0 GPA.

- *UNC Campus Scholarships*--Funding for this program is provided by the General Assembly of North Carolina to each constituent institution of the UNC system. These awards are for North Carolina residents only. These limited awards are provided to students with exceptional financial need who apply by the University's priority date of April 1.

- *UNC Charlotte Grants*--UNC Charlotte administers several other grant programs funded by the State of North Carolina and requires North Carolina residency for consideration. These are available to both graduate and undergraduate students who apply by the established priority date of April 1.

- *UNC Need-based Grants*--These grants are available to undergraduate NC residents and are administered by the College Foundation, Inc. in Raleigh. All who complete the Free Application for Federal Student Aid by the program's deadline date of March 15 are considered for awards.

- *North Carolina Education Lottery Scholarships* – These scholarships are available to undergraduate NC residents who demonstrate the most financial need as determined by the Free Application for Federal Student Aid. The award amounts will vary depending on Federal Pell Grant eligibility.

EMPLOYMENT

Please see the **Student Services and Programs** section of this *Catalog* for details on off-campus and on-campus employment.

OTHER ASSISTANCE

Education for the Vocationally Disabled. Vocationally disabled students are eligible for aid provided by the North Carolina State Division of Vocational Rehabilitation. This aid takes the form of services that include vocational counseling and guidance and placement. Payment of expenses such as training, medical treatment, room and board, books, fees, and tuition may be available. A vocational rehabilitation officer is available in Charlotte for interviewing applicants. Appointments may be made by contacting Vocational Rehabilitation Services at 704-568-8804. Their offices are located at 5501 Executive Center Drive in Charlotte.

Veterans Benefits. UNC Charlotte's Veterans Service Office (VSO), located in the Office of the Registrar, works with the Veterans Administration to assist in

administering the various programs of benefit to veterans or eligible relatives of veterans. The VSO Certifying Official certifies enrollment and transmits necessary credentials and information to the proper Veterans Administrative Office.

Admission to the University should be obtained before the student makes application for veteran's benefits. Applicants must be accepted into a degree program to receive benefits.

In order to be eligible for the full monthly allowance under any of the above laws, an undergraduate student must be enrolled for 12 or more semester hours and a graduate student must be enrolled for nine or more semester hours. Those enrolled on a part-time basis will be eligible for part-time compensation. Students are responsible for reporting any change in enrollment status to the VSO Certifying Official.

For details about available programs, please visit www.registrar.uncc.edu/VA or call the VA's toll-free number at 1-800-827-1000.

Children of Veterans. The North Carolina Department of Veterans Affairs awards scholarships for the children of certain deceased or disabled veterans. Those awarded "full" scholarships are entitled to tuition, mandatory fees, board allowance, and room allowance; those awarded "limited" scholarships are entitled to tuition and mandatory fees. Written requests for benefits information may be directed to: VA Atlanta Regional Office, Post Office Box 100022, Decatur, GA 30031-7002 (telephone 888-442-4551).

Before the time of registration, each eligible student who wishes to enter the University should: (1) apply for admission following University procedures and (2) apply for a scholarship award to the North Carolina Department of Veterans Affairs.

SCHOLARSHIPS

www.uncc.edu/finaid/ScholarshipIndex.html

UNC Charlotte offers a comprehensive program of undergraduate scholarships. Some of these are awarded entirely on the basis of merit, but individual financial need is a consideration in the awarding of many of them. The University's major awards for merit are as follows:

- *The Alumni Scholarships* are awarded annually to continuing students of the University who have proven outstanding scholastic attainment, participated in University and/or community activities, and demonstrated campus leadership. The scholarships were established in 1978 to recognize outstanding full-time students and to encourage their continuing involvement and interest in the activities of the University. Information concerning the scholarships is distributed to each department and college within the University each year prior to the award and contains material outlining application procedures for the scholarships.

- *The Reece A. Overcash Scholarships* are UNC Charlotte's most prestigious scholarships for merit. The Overcash family established the scholarship endowment in honor and memory of Reece A. Overcash, a member of the first class at the Charlotte Center of the University of North Carolina. This merit based award seeks to attract students who demonstrate academic excellence, leadership, and service to others.

- *The C. C. Cameron Scholarships,* established by First Union Corp., honor Mr. C. C. Cameron, who served as Chairman of First Union and as Chairman of the UNC Charlotte Board of Trustees. The purpose of the Cameron Scholars program is to bring outstanding students to UNC Charlotte. Recipients are selected on the basis of academic achievement, demonstrated leadership and service to others. Cameron Scholars are provided financial assistance and work experiences which encourage intellectual growth and stimulate the will to achieve full potential.

- *The D. W. Colvard Scholarships* honor Dr. Dean Wallace Colvard, first chancellor of The University of North Carolina at Charlotte, and his wife, Martha, who were instrumental in founding Friends of UNCC. Dr. and Mrs. Colvard have personified the quest for excellence at UNC Charlotte. The Colvard Scholarships are awarded to applicants on the basis of their achievements in high school, college aptitude tests, and their promise of making meaningful contributions to society. Their roles as leaders and their service to school and community are weighed carefully.

- *The Lloyd C. and Luella L. Danielson Scholarships* were established by the estate of Lloyd C. and Luella Danielson to attract students of good moral character and great potential to UNC Charlotte's Mechanical Engineering majors.

- *The Cameron Morrison Scholarships,* first awarded in 1985, were established as a memorial to former Governor and Mrs. Cameron Morrison. The need-based scholarships recognize students who are public high school graduates from Mecklenburg and Richmond Counties who seek self-improvement and demonstrate initiative and ability. Entering students ranking in the upper 10 percent of their high school graduating class are given preference.

- *The Bonnie E. Cone Scholarships* have been endowed by Clara McKay (Mrs. Charles H.) Stone of Charlotte and other friends of Charlotte College. The scholarships honor Dr. Bonnie E. Cone, founder and developer of Charlotte College, from which UNC Charlotte developed. The Bonnie E. Cone Scholarships are awarded annually to students having high moral character, proven scholastic attainment, and whose further education at the University will, in the judgment of the scholarship committee, enhance the

citizenship of the recipients and advance the service of UNC Charlotte as an institution of excellence.

- *The R. L. Stowe Scholarships* were established in 1990 to honor R. L. Stowe who opened Belmont, North Carolina's first spinning plant, the Chronicle Mill, in 1901.

- *The E. K. Fretwell Scholarships* were established in 1990 in recognition of Dr. E. K. Fretwell Jr., chancellor of UNC Charlotte from 1979 to 1989. The primary purpose of the awards is to attract students of great potential to the University. The scholarships' founders believe that such students stimulate and challenge fellow students and faculty members. Fretwell Scholarships are awarded to graduating high school seniors based on achievements in school, college aptitude test scores, service to school and community, potential for leadership, and for making meaningful contributions to society.

- *The John L. and Margaret S. Fraley Scholarships* were established in honor of John L. Fraley, Sr., retired Chairman of the Board and CEO of Carolina Freight, and his wife, Margaret, as a commitment to the continued strength of corporate America. The recipients must be North Carolina residents with majors within The Belk College of Business.

- *The Provost Scholarships* honor the position of the Provost of the University and are designed to attract students with great potential.

- *The Fay and Cal Mitchell Scholarships* were established in 1974 for students representing academic excellence and an SAT score of at least 1100.

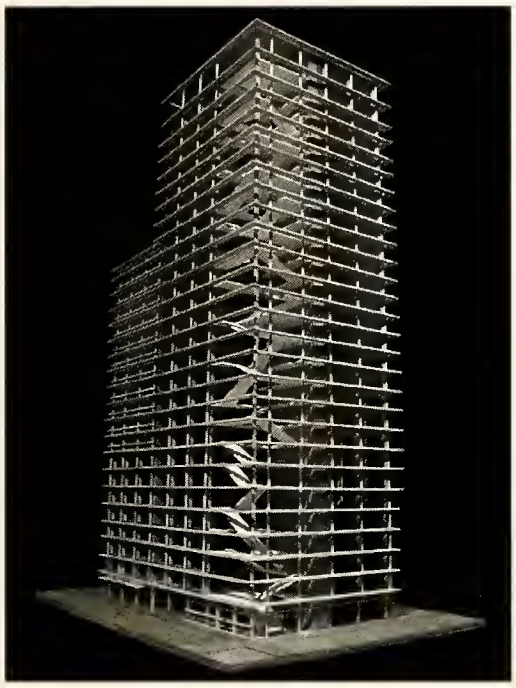
- *The Clara McKay Stone and Charles H. Stone Scholarships* were established in 1986 and first awarded in 1987. Mr. and Mrs. Stone were early supporters and major benefactors of the University. Through their efforts the following were established: the Bonnie Cone Scholarships, the Charles H. Stone Professor of Chemistry, the Charles H. Stone Professors of American History, and the Charles H. Stone Collection of the University Library. The purpose of the Stone Scholarships is to provide scholarship assistance for worthwhile and deserving students and applicants for admission to the University who have high moral character and whose education at the University will better enable the recipients to live worthwhile and productive lives and to further the service of the University to society. The fund provides both merit awards and awards for students who are deserving, but may not have the ability for high academic attainment, and who are in need of financial assistance in order to further their education at the University.

- *The J. Murrey Atkins Scholarships* were established in 1963 in memory of J. Murrey Atkins, Sr., the first Chairman of the Board of Trustees at Charlotte College, which later became UNC Charlotte. The recipient must be a North Carolina resident.

- *The Rebecca and Walter Roberts Scholarships* were established in 1999. The Roberts Scholarships were established to honor Walter and Rebecca Roberts. The education of Rebecca Roberts, a 1998 UNC Charlotte graduate, and the other children of Walter Roberts was ensured by a trust fund established by the Superior Continental Corporation following Walter Roberts' death. The remaining monies in the trust were generously donated to the University upon Rebecca Roberts' graduation. The purpose of the Roberts Scholarships is to provide scholarship assistance to worthy non-traditional students pursuing a degree in Communication Studies. The Roberts Scholarships are awarded to applicants on the basis of their potential for success as Communication Studies majors.

Detailed information about the scholarships named above, including minimum qualifications, selection processes, and the amount of the stipends, may be obtained online from the Financial Aid webpages at www.uncc.edu/finaid/ScholarshipIndex.html.

Need-based and Departmental Scholarships. Numerous other scholarships are administered by the Student Financial Aid Office. In most cases, there is no special application for these scholarships, and all aid applicants will be considered unless the scholarship is noted as an exception. Normally, those students with demonstrated need and a grade point average of 3.5 or better will be considered for scholarships.



College of Architecture

www.coa.uncc.edu

Dean: *Kenneth Lambla*
Associate Dean: *Lee Gray*
Chair of Instruction: *Betsy West*

Emeritus Professors: *C. Hight, R. MacLean*
Professors: *D. Brentrup, E. Sauda, D. Walters*
Associate Professors: *K. Carlson-Reddig, C. Grech, J. Nelson, D. Ryan, G. Snyder, M. Swisher, D. Thaddeus, P. Wong*
Assistant Professors: *C. Beorkrem, J. Gamez, Z. Lin, P. Makas, M. Morris, L. Samuels*
Lecturer: *R. Preiss*
Adjunct Professors: *J. Bartl, C. Gault, J. Holden Bulla, R. Kazebee*

Mission. The mission of the College of Architecture (CoA) is to further the discourse between the theory and practice of architecture by the education and training of students, the work and research of the faculty, and ongoing engagement with the University, the profession, and the community. Architecture in the narrow sense includes important public monuments and, in the broader sense, the constructed environment at all scales.

To prepare undergraduate students to become future community and architectural leaders, the College of Architecture seeks to provide both a liberal and a professional education based on a holistic view of the built environment. The studio/seminar sequence in the Core Program emphasizes both writing and making to introduce students to alternative and complementary methods of investigating problems. The professional degree path in the Advanced Program culminates in a comprehensive architectural project emphasizing self-direction and individualized instruction.

Admission. All students must first apply and be accepted by the University. Following acceptance to the University, application is then made to the College by: 1) completion and submission of a CoA application; 2) an evaluation of this application by a faculty committee; and, if selected, 3) a personal interview, including the presentation of samples of their creative work.

Admission to the College of Architecture is to the Five-Year *Bachelor of Architecture* program at the undergraduate level. Following Year 3, students are required to submit an "Individualized Study Plan" with the Academic Advisor which declares their intent to pursue one of two academic tracks: either a four-year, *Bachelor of Arts in Architecture* program (which is not a professionally accredited degree) or the five-year, *Bachelor of Architecture* program (professionally accredited).

However, students must maintain a minimum grade point average set by college faculty (3.0 in architectural studies through the fourth year) to be granted automatic continuation to the fifth year. Students with an *automatic admit* to fifth year have two opportunities to exercise this option: the fall semester immediately following graduation from the four year degree program or the fall semester of the following academic year. Students who do not have a 3.0 in architectural studies must submit a separate application for admission to the fifth year *Bachelor of Architecture* program.

Accreditation. The College of Architecture maintains accredited status through the National Architectural Accrediting Board, which reviews the curriculum, facility, faculty, and program resources annually. In addition, the NAAB conducts an intensive site visit every six years. The College has maintained full accreditation standards as prescribed by this board and includes the requisite statement:

> **"In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture,**

recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Master's degree programs may consist of a preprofessional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the preprofessional degree is not, by itself, recognized as an accredited degree."

BACHELOR OF ARCHITECTURE

The professional program leads to the **Bachelor of Architecture** degree which requires a total of 158 credit hours. This five-year program provides the professional degree accredited by the National Architectural Accreditation Board (NAAB). Students in this program are also awarded a *Bachelor of Arts in Architecture* degree at the end of four years.

Core Program. All students in the College complete a three-year core sequence of courses designed to provide a solid understanding of fundamental issues, knowledge, and skills in architecture. These courses include a series of coordinated studios, skill-building workshops and seminars, a four-semester sequence of architectural history (two survey courses and two topics electives), and four courses in building technology (one course in architectural materials, two semesters of structural design, and one course in Environmental Control Systems).

Advanced Program. Students proceeding toward the Bachelor of Architecture degree program enter the Advanced Program in their Fourth and Fifth Years of study. These years present the opportunity for greater depth of inquiry, breadth of understanding and synthesis through architectural design.

In the Fourth Year several topical design studios are offered which permit focused study. These include (typically): urban and community design, tectonic issues, lighting and energy use, landscape and site, and contemporary issues in architectural design. Additionally, students enrolled in the Advanced Program complete one remaining course in building technology (Building Systems Integration) and Professional Practice.

The Fifth Year is composed of a year-long sequence of two linked studios which are directed at an individual Comprehensive Architectural Project involving design research and application.

The College also offers a **one-year Bachelor of Architecture program** for students who have an architectural or environmental design degree from another NAAB accredited institution. Following an assessment of student performance criteria for equivalence with the UNC Charlotte program, students will be required to complete a minimum of 30 credit hours, including 12 hours of architectural studio, nine hours of other architectural courses and nine hours of general studies. No transfer credit is accepted for this program.

Foreign Language Requirement. All students who earn a degree in the College of Architecture are required to demonstrate proficiency in the language of their choice through the 1202 level.

Proficiency can be demonstrated in the following ways: (1) completing the required course work at UNC Charlotte; (2) completing three years of the same language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; or (5) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

CURRICULUM OUTLINE: BACHELOR OF ARCHITECTURE

First Year (Core Program)

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ARCH 1101 Architecture Design Studio 1	5	ARCH 1102 Architecture Design Studio 2	5
ARCH 1601 Architectural Seminar	2	ARCH 1602 Architectural Seminar	2
MATH 1103	3	MATH, STAT or PHIL	3
ENGL 1101	3	ENGL 1102	3
LBST 1101, 1102, 1103, 1104 or 1105	3	PHYS 1101 with lab (Physical Science)	4

Second Year (Core Program)

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ARCH 2101 Arch Design Studio 3 (O)	5	ARCH 2102 Arch Design Studio 4	5
ARCH 2601 Architectural Seminar (W)	3	ARCH 4312 Architectural Materials	3

ARCH 4211 Architectural History I	3	ARCH 4212 Architectural History II	3
Life or Physical Science*	4	LBST 2102	3
LBST 2101	3	Social Science (Gen Ed)	3

Third Year (Core Program)			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ARCH 3101 Architecture Design Studio 5	5	ARCH 3102 Architecture Design Studio 6	5
ARCH 4313 Structures I	3	ARCH 4314 Structures 2	3
ARCH 4315 Environmental Control Systems	3	ARCH 4214 Topics in Arch. History	3
Foreign Language	4	ARCH 4050 Architectural Elective*	3
		Foreign Language	4
(Individual Study Plan required of all students)			

Fourth Year (Advanced Program)			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ARCH 4101 Topical Arch Studio	5	ARCH 4102 Topical Arch Studio	5
ARCH 4213 Topics in Arch History	3	ARCH 4050 Arch Elective*	3
ARCH 4050 Arch Elective*	3	General Elective* (W)	3
LBST 2211, 2212, 2213, 2214 or 2215	3	Arch or General Elective*	3

Fifth Year (Advanced Program)			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ARCH 4103 Project Document	6	ARCH 4104 Project Design	6
ARCH 4317 Bldg. Systems Integration	3	ARCH 4112 Architectural Practice	3
Architectural or General Elective*	3	Architectural or General Elective*	3
Concepts & Ideas Course	3	General Elective*	3

Bachelor of Architecture = 158 hours

**Courses to be selected in accordance with program of study developed with and approved by faculty advisor.*

BACHELOR OF ARTS IN ARCHITECTURE

Students submitting an "Individualized Study Plan" in their Third Year may alternatively pursue a four-year Bachelor of Arts degree with a major in Architecture requiring a total of 128 credit hours. This degree is not an accredited first professional degree. The course requirements for this degree track differ substantially from those of the Bachelor of Architecture program. These differences are primarily aimed at providing a flexible curriculum that replaces design studios and Structures II with directed electives.

This degree is for students not intending to continue to the five-year, professional degree. Students choose to augment their architectural studies with coursework from other University departments in their fourth year, double major or minor in other disciplines, or prepare to pursue graduate studies in related fields (such as, planning, urban design, landscape architecture, or architectural history).

CURRICULUM OUTLINE: BACHELOR OF ARTS IN ARCHITECTURE

For Years One through Three, please follow the Curriculum Outline for the previously listed Bachelor of Architecture curriculum. For Year Four, use the following:

Fourth Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ARCH 4213 Topics in Arch. History I	3	Architectural or General Electives (2)*	6
General Elective* (W)	3	General Electives (3)*	9
LBST 2211, 2212, 2213, 2214 or 2215	3		
Architectural or General Elective*	3		

B.A. in Architecture = 128 hours

**Courses to be selected in accordance with program of study developed with and approved by faculty advisor.*

ACADEMIC STANDARDS

Following are specific academic standards for each degree program:

B.A. degree in Architecture. One grade of *D* in a studio is permissible. A grade of *D* in a subsequent studio will require repeating the course. A student may not repeat a course more than once. Successive *D* grades will result in academic suspension.

To graduate, an overall grade point average of 2.0 must be achieved in all courses offered by the College.

Bachelor of Architecture degree. A grade of *C* is the minimum passing grade in both studios, ARCH 4103 and 4104. A grade of *D* in ARCH 4103 prohibits a student from entering ARCH 4104; a grade of *D* in ARCH 4104 prohibits a student from graduating. Courses for which a grade of *D* is received must be taken again; any student receiving less than a grade of *C* when repeating a studio course will be suspended from enrollment in the CoA.

A grade of *F* in either ARCH 4103 or 4104 requires a student to reapply to the 5th year program.

To graduate, all students must maintain an overall grade point average of 2.5 in Fifth-Year coursework offered by the College.

AREAS OF ACADEMIC FOCUS

College faculty offer expertise to provide instruction in the following areas:

Architectural Design Studios and Seminars. The studios and seminars provide both analytical and synthetic experiences along with the opportunity to pursue intense study of physical-environmental related subject(s). These courses link humanistic, physical phenomena, social-psychological, behavioral and perceptional studies.

Building Technology Courses. These courses provide a basic quantitative and qualitative understanding of building materials, structural theory and design, environmental control issues, and building systems integration.

Architectural History Courses. These courses develop an understanding of the relationships between culture and its physical manifestations from ancient to contemporary times.

Architectural Electives. These courses provide opportunities for topical study of issues current and historic to architectural practices: theoretical concerns, urban design, landscape, representational ability, technical skill, community practice, and constructional/making concerns.

Electives are organized around the following three themes or concentrations:

(1) *Architectural Design, Theory, & Practice* - This concentration focuses on a sophisticated and detailed study of building and site design involving issues of form, space, order, and typology as well as cultural and physical context, concept, meaning, etc. It includes both investigation and criticism of contemporary practice and practitioners as well as the role of theory and historical precedent relative to the design and making of architecture.

(2) *Urbanism* - This concentration focuses on the critical role of architecture in the city - the process and specific intent of physical intervention in urban landscapes and infrastructures. Through the design of groups of buildings as well as larger scale urban areas, issues of policy, politics, finance, planning, place, and culture are introduced as part of the essential conception and history of the city fabric.

(3) *Architectural Technology* - This concentration focuses on study and experimentation addressing emerging issues of sustainable design and the creative development of building envelopes and systems that utilize both new and traditional materials, technology, and construction methods in innovative and beautiful ways. Seeking to explore the historical as well as contemporary realms of thermal, tactile and visual issues embedded in this field, students address appropriate material selection, methods of daylighting, passive and active systems for heating and cooling, etc. with consideration of both qualitative and quantitative outcomes.

Independent Studies. When appropriate, a student may pursue a self-directed, faculty-approved study of a particular, significant architectural topic or subject.

General University Requirements and Directed Electives. Courses to meet the University's General Education requirements and elective studies are included in a student-selected, faculty-approved plan of study.

Advising. The advising program consists of two tiers: Staff Academic Advisor (core program advising) and Associate Dean (advanced program advising).

Education Abroad Programs. The College has conducted studio and field study summer programs in Italy and Spain since 1987 for students in the Advanced Program. In addition, exchange arrangements exist through the Office for International Programs for students to study architecture for one or two semesters at: University of Copenhagen (Denmark); Kingston University (London, England); The University of Applied Science, (Aachen, Germany); and the Henry van de Velde Institute (Antwerp, Belgium).

College of Arts and Sciences

www.coas.uncc.edu

Dean: *Nancy Gutierrez*
Senior Associate Dean: *Bill Hill*
Associate Dean for Information & Instructional Technology: *Dale Pike*
Associate Dean for Student Services: *Diane Zablotsky*
Director of Sponsored Research: *Pamela King*
Director, Arts and Sciences Advising Center: *Vacant*

Objectives. The College of Arts and Sciences, largest of the University's seven colleges, consists of 22 departments and eight undergraduate interdisciplinary programs which share basic educational values and academic aspirations. The primary mission of the college is threefold: 1) the provision of programs of study and instruction in the arts and sciences to qualified undergraduate and graduate students; 2) the advancement of the arts and sciences through the scholarly activity of the faculty; and 3) the provision of service to the University and general public.

The liberal arts are the core of the University's educational program, both for students majoring in Arts and Sciences and for students majoring in professional degree programs. As a result, courses offered within the College of Arts and Sciences are frequently those designated to satisfy University General Education requirements (see *General Education Requirements* in the *Academic Regulations and Degree Requirements* section of this *Catalog*).

Organization. The College of Arts and Sciences includes the Departments of Aerospace Studies (Air Force ROTC); Africana Studies; Anthropology; Art and Art History; Biology; Chemistry; Communication Studies; Criminal Justice; Dance and Theatre; English; Geography and Earth Sciences; History; Languages and Culture Studies; Mathematics and Statistics; Military Science (Army ROTC); Music; Philosophy; Physics and Optical Science; Political Science; Psychology; Religious Studies; and Sociology. Undergraduate interdisciplinary programs in American Studies, Film Studies, Gerontology, Judaic Studies, International Studies, Islamic Studies, Latin American Studies, and Women's Studies are also part of the College of Arts and Sciences.

Programs. Baccalaureate degrees are offered in all departments and minors are available in the following programs: Actuarial Mathematics, African-American Literature, Africana Studies, American Studies, Anthropology, Art, Art History, Biology, Biotechnology, Chemistry, Cognitive Science, Communication Studies, Criminal Justice, Dance, Earth Sciences, English, Film Studies, French, Geography, Geology, German, Gerontology, History, International Studies, Islamic Studies, Japanese, Journalism, Judaic Studies, Latin American Studies, Mathematics, Meteorology, Music, Philosophy, Physics, Political Science, Psychology, Religious Studies, Russian, Sociology, Spanish, Technical and Professional Writing, Theatre, Urban Studies, Western Antiquity and Classical Languages, and Women's Studies. Medical technology options are available in Biology and Chemistry. For details on graduate degrees and certificates, please see the *UNC Charlotte Graduate Catalog*.

Although faculty within the College are committed to departmentally based programs, increased emphasis is being placed on providing strong interdisciplinary programs. The College also strives to promote intercultural understanding through its curriculum, as well as through student exchanges and travel opportunities.

Degree Requirements.

General Education: Since all students entering the University must meet the same General Education requirements regardless of major, it is appropriate to concentrate on the completion of those requirements before committing to a specific major. Undeclared students have time to enroll in courses in several disciplines, which allows them to make a more informed judgment about future career decisions. Advisors have a broad working experience with the requirements for majors and offer assistance as students search for the education choice best suited to their individual needs.

Degree Programs and Minors: Students in the College of Arts and Sciences must satisfy the requirements for the degree program(s) in which they are enrolled. Students should consult with their chosen department to make certain they fully understand all degree requirements. Some departments in the College of Arts and Sciences require completion of a minor program of study in conjunction with their major degree program. Students should be familiar with the requirements of any minor program of study they attempt to complete.

Foreign Languages: All students who earn a degree within the College of Arts and Sciences are required to demonstrate proficiency in the language of their choice through the 1202 level.

Proficiency can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same foreign language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) by transferring in with an A.A., A.S. or A.F.A. degree; or (6) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

This requirement will apply to all students entering any degree program within the College of Arts and Sciences Fall 2005 and beyond. Students enrolled in the University prior to Fall 2005 but not enrolled in a degree program in the College of Arts and Sciences Fall 2005 and beyond will be subject to this requirement.

Although all students in the College of Arts and Sciences are subject to the 1202 proficiency requirement, students in selected departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. All students in the College of Arts and Sciences should consult with their major department to determine whether or not they are required to complete the intermediate proficiency requirement as part of their major or related coursework.

Advising Center. The College of Arts and Sciences administers an advising center for students who have enrolled in a major within the college. College advisors are available to provide guidance on both major requirements and general education requirements. Students enrolled in *all* College of Arts and Sciences majors are encouraged to consult with college advisors to clarify academic regulations and check their progress toward fulfilling requirements.

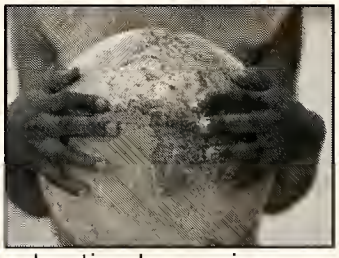
Experiential Learning Opportunities. Students are encouraged to participate in professional work experiences in support of their academic and career development through the cooperative education, 49ership, and internship programs offered to them. The College works with the University Career Center to expand experiential learning offerings to enable more students to graduate with career-related experience. For more information about experiential learning programs, please see "Experiential Learning Programs" in the "Student Services and Programs" section of this *Catalog*.

Department of
Africana Studies

www.africana.uncc.edu

Frank Porter Graham Professor: *T. Ojaide*
Associate Professors: *D. Ruiz, V. Nmoma Walker*
Assistant Professors: *D. Smith, R. Smith, T. Rogers*

The Africana Studies program addresses the experience of peoples of African descent on the continent of Africa and in the Diaspora, particularly in the United States. It focuses on the history, economy, politics, literature, religion, and culture of black people throughout the world and their interaction with the rest of humankind. Its interdisciplinary approach, drawing from the experience of faculty trained in the areas of Africana Studies, presents a stimulating diversity of perspectives integrated into a totality not available in other disciplines, programs, or departments. The curriculum is designed to provide a useful educational experience and academic skills for students who wish to consider graduate study or professional school and pursue careers in community development agencies; federal, state, and city civil service; business; museums and archives; and diplomatic or foreign service; as well as research, journalism, international organizations, and teaching.



The goals of the Department of Africana Studies are:

a. To provide and preserve knowledge with

purpose and direction about the aggregate experience of peoples of African descent by offering a Bachelor of Arts degree in Africana Studies and courses in the field to the University community and the public.

b. To foster intercultural understanding, expose and correct biased scholarship, and dispel myths and stereotypes through course content, programs, exchanges, and cultural interaction.
c. To provide a cultural background (through courses, advising, and other meaningful activities) supportive to students, particularly African-American students, in moving toward personal growth and self-awareness.
d. To provide general and specific academic skills to majors and non-majors through courses and activities that promote research, writing, reading, and effective communication.
e. To promote an African-American and African perspective that will foster a political consciousness about the common bond uniting blacks in the Diaspora and the African continent.
f. To prepare and assist students for career choices in life and graduate and professional schools through exposure to relevant experiences, courses, and the demands of the working world.
g. To establish and maintain the Department's interdisciplinary and intercultural nature through cooperative arrangements with other academic departments and civic and cultural institutions.
h. To generate new knowledge and paradigms about the African-American and African experience through research, publication, and constant communication with similar programs.
i. To promote faculty development by providing required financial means, time, resources, and proper environment to accomplish this end.

Study Abroad. Students may have an opportunity to travel, work, and study abroad in an exchange program through an African university, the Peace Corps, and Operation Crossroads.

BACHELOR OF ARTS

Students interested in the Africana Studies major leading to a B.A. degree are required to complete a minimum of 30 credit hours in the fields of Africana Studies, chosen from AFRS 1100, 1111, 1112, 1103 or 1104, 2203, 2204, 2205, 2206, 3290, 3601 and 3990. Students may not graduate without completing AFRS 1100, 1111, 1112, 3290, and 4000. Students are strongly encouraged also to take AFRS 2201 when offered. In order to acquire experiences to enhance their career choices, students majoring in Africana Studies are recommended to pursue a double major in related areas such as history, political science, sociology, religious studies, criminal justice, anthropology, and psychology.

The required junior research methods and senior seminar courses introduce students to research methodology and an in-depth probe into the themes and theories of Africana Studies. During the junior or senior year, with the instructor's assistance in the research methods class, students design and work on a major research project. Using library, archival, or community resources, students demonstrate practical mastery and synthesis of the skills and knowledge acquired through the major courses of study. Consult the Department of Africana Studies for a suggested schedule to complete the B.A. degree with a major in Africana Studies.

Senior projects, which may vary in the number of credit hours, require student involvement in co-op programs, internships, or community agencies such as the Afro-American Cultural Center, the Greenville Center, City Hall, *The Leader*, the Metrolina Association for the Blind, Planned Parenthood, the *Charlotte Observer*, and the *Charlotte Post*.

MINOR IN AFRICANA STUDIES

A minor in Africana Studies consists of a minimum of 18 semester hours: two at the 1000 level, the 2000 level, and the 3000 and/or 4000 level. The required course is AFRS 1100. AFRS 3895 shall not count towards the minor.

American Studies

www.americanstudies.uncc.edu

Director: *Paula Eckard*

American Studies is an interdisciplinary program designed to develop in-depth knowledge of American society, past and present. Drawing its curriculum from approved classes in other departments and its own core courses, the program weaves traditionally divergent disciplines together so that students gain a broad understanding of American life and culture. The American Studies program is open to students of all majors. Students may complete the program by fulfilling requirements for the minor.

MINOR IN AMERICAN STUDIES

A minor in American Studies consists of 18 semester hours: six hours of American Studies courses including AMST 3100, and 12 semester hours of American Studies courses or approved

American-content courses from other departments. A maximum of six of these hours may be in the student's major. If the student has additional majors or minors, no more than six hours from each of these may apply to the American Studies major. These stipulations include crosslisted courses regardless of the program designation under which the course was taken. Exceptions may be approved by the Program Director and, if necessary, upon consultation with the other program in question. *Note: Students exercising this option should be aware that the accuracy of the online degree audit may be affected.* All students must have a grade point average of at least 2.0 in courses applied to the minor.

The following courses have been approved for the minor. Because additions and deletions are made to correspond to current University offerings, students are advised to consult with the Director. Other classes that do not appear on the list, especially topics and independent study courses, may be approved if they are pertinent to the student's program and deal with an American topic.

Africana Studies: 1100, 1111, 1112, 2105, 2106, 2120, 2203, 2204, 2208, 2215, 2301, 3101, 3150, 3179, 3218, 3240, 3250, 3280, 4106, 4107, 4108
American Studies: 2050, 2100, 3000, 3050, 3090, 3100, 3210, 3800, 4050
Anthropology: 2112, 2114, 2152, 4110
Architecture: 4214
Art: 2190
Business Law: 3150, 3250
Communications: 2110, 2120, 3052, 3115, 3120, 3121, 3130, 3131, 4101, 4102
Criminal Justice: 2102, 2120, 2154, 3102, 3110, 3112, 3120, 3121, 3130, 3141, 3150, 3151, 3152, 3153, 4101, 4160, 4161, 4162
Dance: 2226, 2227
Economics: 1101, 1201/2101, 1202/2102, 3105, 3106, 3107, 3115, 3122, 3123, 3131, 3141, 3151
English: 2104, 2301, 3132, 3140, 3141, 3142, 3143, 3144, 3156, 4103, 4145, 4146, 4147, 4148, 4156, 4157, 4158
Geography: 2140, 2155, 2160, 2200, 3100, 3110, 3115, 3150, 3200, 3205, 3210, 4108, 4209
Gerontology: 2100, 3132, 3267, 4260
History: 1160, 1161, 2101, 2105, 2120, 2125, 2130, 2135, 2141, 2150, 2151, 2155, 2160, 2161, 2297, 3000, 3201, 3202, 3203, 3211, 3212, 3213, 3215, 3218, 3240, 3241, 3242, 3252, 3256, 3260, 3280, 3281, 3288, 4000
Music: 1133, 1134
Philosophy: 3217, 3243
Political Science: 1110, 2120, 3010, 3101, 3102, 3103, 3104, 3105, 3108, 3109, 3111, 3112, 3114, 3115, 3116, 3119, 3121, 3123, 3124, 3125, 3126, 3128, 3157, 3172, 4110
Religious Studies: 2108, 3135, 3137, 3150
Sociology: 2100, 2112, 2132, 2171, 3110, 3132, 3173, 3175, 3267, 4110, 4112, 4124, 4125, 4130, 4131, 4134, 4135, 4150, 4165, 4168, 4632
Social Work: 3120, 3201, 3202, 4100
Women's Studies: 1101, 2110, 2120, 2150, 2251, 3102, 3130, 3140, 3150, 3160, 3231, 4130, 4165, 4260

Department of Anthropology

www.anthropology.uncc.edu

Chair and Associate Professor: *J. Levy*
Professor Emeritus: *G. Ferraro*
Professors: *J. Marks, D. Shenk*
Associate Professors: *D. Brockman, G. Starrett, C. Wayland*
Assistant Professors: *K. Metzo, D. Ogburn, C. Tetreault*
Lecturers: *G. Green*

Anthropology is the study of humans and their cultures, and the exploration of diversity in time and space. It is organized into four subfields: cultural anthropology, archaeology, biological anthropology, and linguistics. It emphasizes the comparative study of humans and the cross-cultural analysis of their social and cultural responses to fundamental human needs.

The study of anthropology is relevant for people whose goal is graduate study, as well as for people whose occupations and endeavors require a cross-cultural understanding of human nature and biology, human history and prehistory, and the variety of cultures humans have developed. It is particularly useful for teachers, medical personnel, social workers, and persons seeking careers in business and communications, as well as persons who plan to work in or with foreign countries. It provides competencies needed for employment in such organizations as museums, government agencies, school systems, corporations, police departments, the Park Service, and healthcare institutions.

BACHELOR OF ARTS

A major in Anthropology leading to the B.A. degree requires completion of: (1) 34 semester hours of anthropology; including (2) ANTH 1101, 2141, 2151, 3101 and 4601; plus (3) 18 semester hours of electives in anthropology, including at least six semester hours in cultural anthropology; and (4) completion of ANTH 4601 with a grade of *C* or better.

Also required are 18 semester hours of related work to be arranged in consultation with the student's advisor and organized around a region, an allied discipline, or minor in another approved discipline.

Students majoring in Anthropology must complete either a 2000-level course in a foreign language that uses the Latin alphabet (French, German, Italian, Spanish, etc.) or a 1202-level course in language that is not written in the Latin alphabet (Greek, Hebrew, Japanese, Russian, etc.), or demonstrate proficiency at that level. Intermediate American Sign Language is accepted. Non-native speakers of English may complete the foreign language requirement by passing ENGL 1101 and ENGL 1102 or the equivalent.

Students should consult the Department concerning internships and field schools in anthropology.

BACHELOR OF ARTS WITH CONCENTRATION IN APPLIED ANTHROPOLOGY

The Concentration in Applied Anthropology is designed to equip anthropology majors with the skills needed for a career in applied anthropology, an area with growing employment opportunities. Applied anthropologists work in educational institutions, museums, zoos, health care organizations, non-profits, the business world, and elsewhere. Preparation for a career in applied anthropology involves developing a special set of job skills, in addition to a breadth of anthropological knowledge. Students who pursue a concentration in applied anthropology will complete coursework that will help them develop these skills.

The concentration in applied anthropology does not require more coursework than the traditional major. Instead, it requires specific coursework. Both options require a total of 11 courses/34 hours in anthropology and 18 hours of related work. The requirements for an anthropology major with a concentration in applied anthropology are:

1) 34 hours of anthropology coursework as follows:
   a) 16 semester hours in anthropology core courses (ANTH 1101, ANTH 2141, ANTH 2151, ANTH 3101, and ANTH 4601)
   b) ANTH 3111 Applied Anthropology (3)
   c) ANTH 3480 Internship in Anthropology (3)

2) One course in anthropological methods (e.g., ANTH 4453 Field Project in Archaeology, ANTH 3140 Forensic Anthropology; ANTH 4122 Ethnographic Methods, or ANTH 4140 Primate Field Biology)

3) 9 semester hours in anthropology electives

4) 18 hours of related work consisting of the following:
   a) Quantitative Skills: 3 hours in statistics (STAT 1221 or 1222, or SOCY 4156, or another approved quantitative methods course)
   b) Communication Skills: 3 hours in ENGL 2116 or COMM 1101 or another approved course
   c) Interdisciplinary Skills: 9 hours in coursework outside of anthropology that focuses on a specific topic (e.g., health, education, public policy, business, political science, Latin America, Africa, Asia, etc.)
   d) Technical Skills: 3 hours that will equip students with technical skills necessary in their job area (e.g., advanced language skills beyond 2201, GIS or computer skills, lab skills).

Note: A GPA of at least 2.0 is required in the 34 hours of anthropology.

MINOR IN ANTHROPOLOGY

The minor in Anthropology requires the completion of 18 hours of anthropology including ANTH 1101 and 15 hours of electives with at least one course in each of three subdivisions of anthropology: cultural anthropology, biological anthropology, and archaeology. A grade point average of at least 2.0 is required in the 18 hours of anthropology.

MINOR IN APPLIED ANTHROPOLOGY

The goal of the minor in applied anthropology is to train students majoring in other disciplines to incorporate anthropological knowledge and methods into their careers. As such, the applied minor will allow students to focus on the area(s) that interest them the most (instead of introducing students to the four subfields as our traditional minor does). The Minor in Applied Anthropology requires the completion of 18 hours in Anthropology to be completed as follows:

- ANTH 1101 Introduction to Anthropology
- ANTH 3111 Applied Anthropology
- One approved course in anthropological methods (e.g., ANTH 4453 Field Project in Archaeology, ANTH 3140 Forensic Anthropology, ANTH 4122 Ethnographic Methods, or ANTH 4140 Primate Field Biology)
- 9 semester hours of electives in anthropology

A grade point average of at least 2.0 is required in the 18 hours of anthropology.

HONORS PROGRAM IN ANTHROPOLOGY

The Department offers an Honors program in Anthropology to students whose GPA is at least 3.2 overall and 3.5 in anthropology.

To graduate with honors in anthropology, a student must complete ANTH 4601(H), 4701, an internship or study abroad, and two university honors courses.

For further information, interested students should

consult with the Department Chair.

Department of
Art and Art History

www.art.uncc.edu

Chair and Professor: *R. Strassberg*
Professors Emeritus: *E. Anderson, L. Corbus, H. Hoover, M. Kampen, R. MacKillop, M. Strawn*
Associate Professors: *S. Brenner, D. Edgar, J. Franki, E. Hudson, J. Murphy, W. Tite, M. Tuma*
Assistant Professors: *D. Brodeur, J. Ford, J. Frakes, H. Freeman, M. Godlewska, A. Herren, P. Lawton, B. Noble, J. Tweedy*
Lecturers: *M. Bergmann, K. Bryant, F. Hawthorne, A. Kluttz, K. Rothrock, M. Simpson, J. Tselentis, D. Wall*
Undergraduate Education Coordinator: *M. Bergmann*

The Department of Art and Art History offers a diverse and comprehensive program leading to a Bachelor of Fine Arts, a professional degree in studio art, a Bachelor of Arts, a liberal arts degree in studio art, and a Bachelor of Art History. Students pursuing the Bachelor of Fine Arts are required to select a studio concentration in ceramics, fibers, graphic design, illustration, painting, photography, print media, or sculpture. Students may develop a cross-disciplinary concentration under special circumstances. The department offers K-12 teacher licensure in Art with the B.F.A. in Art or the B.A. in (studio) Art, which will require additional credit hours.

Members of the studio, art history, and art education faculty are recognized professional artists and scholars active in their fields of specialization. Because of the comprehensive educational backgrounds of faculty, students are encouraged to embrace a variety of conceptual and aesthetic points of view.

The study of art history offers a key to understanding the evolution of civilization and the development of human creativity. As a discipline, art history encourages appreciation of individual works of art and instills a vivid awareness of the social and historical context in which these works were produced.

The Art program addresses the needs of students working to become exhibiting artists, art teachers or scholars. It also prepares students for a wide range of career choices in art-related professions. The program is structured upon the following premises:

- Students need an awareness of the common core of historical and theoretical knowledge in the arts.
- Students need a basic level of skill and aesthetic sensitivity in a variety of studio disciplines.
- Students need in-depth knowledge to critically synthesize formal and conceptual aspects of work in a specific area of study.

Courses designated "for non-majors only" cannot be counted toward the total numbers of credits required for the major. Students must receive a grade of *C* or better in all courses applied to the major or minor. Students cannot advance to the next course in a sequence until a grade of *C* or better is earned in prerequisite courses.

Students intending to earn a B.F.A. in Art should take three to four Art courses per semester beginning their freshman year. All of the General Education classes should be organized around the Art requirements. It is not possible to graduate in four years without taking this number of Art courses right away. Prerequisite sequencing dictates the time to graduation and all students should become thoroughly familiar with course descriptions in the *UNC Charlotte Undergraduate Catalog*.

Students seeking to apply course work taken at other institutions to any of the majors or minors offered by the Department of Art and Art History must provide copies of the official course description and a syllabus for each course requested for consideration.

It is not possible to earn both a BA in Art and a BA in Art History at UNC Charlotte. It is not possible to earn a BFA in Art and a BA in Art History. It is also not possible to earn a BFA in Art and a BA in Art. It is possible, however, to earn a BA in Art and return to UNC Charlotte, complete the requirements for the BFA in Art, and replace the BA with the BFA. Contact the Coordinator of Undergraduate Education for more information.

ADVISEMENT IN ART

All Art, Art History, and Pre-Art majors are assigned an initial advisor in the Department of Art and Art History. Students may request to change the assigned advisor during the first two weeks of classes each semester. Any student interested in Art Education should contact the Coordinator of Art Education as soon as possible after acceptance to UNC Charlotte. Faculty office hours and advising sheets listing all curriculum requirements are available in the Department office and online at www.art.uncc.edu.

Any student with Pre-Art (studio degree only), Art or Art History major status will not be able to register for any class at UNC Charlotte until he/she attends the departmental Advising Day. Advising Day, which occurs the week before pre-registration, condenses advising appointments into a single day each fall and spring semester. All faculty advisors are present in a single location from 9 a.m. - 5:30 p.m. Most Art classes are cancelled that day, allowing advisors to help their advisees arrange upcoming schedules, ask questions from instructors, interact with peers, and seek help from administration. Without documentation of attendance, students will not be allowed to register for any class until all other UNC Charlotte students have already had their registration appointment times.

Students must contact their assigned faculty advisors for specific Advising Day dates and requirements if they are not enrolled in Art classes. All Advising Day information and requirements are given to students in Art classes. It is the responsibility of the students to contact the Department of Art and Art History and the assigned faculty advisor in the case that they are not currently taking classes in Art, are studying elsewhere for the semester, or are not currently enrolled but intend to return to school.

Students seeking to confirm that graduation Art requirements will be met must request a 'graduation check' from the Coordinator of Undergraduate Education before October 15 to receive results during the Fall semester, and before March 15 to receive results during the Spring semester.

BACHELOR OF ARTS IN ART (B.A.) - 42 credits

All students interested in a studio Art major are required to submit a portfolio application to the Department of Art and Art History. An Admissions Committee reviews portfolios three times during the Fall and Spring semesters and as needed during the Summer semesters. Students should submit portfolios while waiting for acceptance to UNC Charlotte, or during the first one or two semesters of study. A minimum GPA of 2.0 is required for admission to this major. Upon acceptance, students must fill out a Change of Major/Minor form to record the Art major status.

All students who have not submitted the entrance portfolio but who have indicated an interest in Art on the UNC Charlotte application will be listed as Pre-Art majors. This status will not change until the entrance portfolio has been accepted. If a student is declined admission to the program, he or she may resubmit a different portfolio. There is no limit to the number of entrance portfolio submissions.

All students who have passed the entrance portfolio requirement begin in the B.A. degree program. Students who are interested in the Bachelor of Fine Arts (B.F.A.) degree must complete a specific number of courses while in the B.A. degree program and then submit a more sophisticated portfolio of work to the B.F.A. Review Committee. This is explained in greater detail elsewhere in the B.F.A. section of the *Catalog*.

Many lower level and all upper level classes are available to Art majors only. Students without this status must seek permission from instructors to register for any class with 'Art majors only' status. Permission is granted at the discretion of the instructor and is not guaranteed. Students in the B.A. program will not be given access to any upper division classes that have a prerequisite of B.F.A status. These classes are reserved for students who have been accepted into the B.F.A. degree program only.

REQUIREMENTS FOR B.A. IN ART

Academic Courses (15 credits)
ARTH 1211 Art History Survey I (3)
ARTH 1212 Art History Survey II (3)
ARTH 2110 Contemporary Art History (3)
ARTH xxxx Art History Elective (3)
ARTA 4600 Senior Seminar (3) (W,O)

Foundation Studio Courses (12 credits)
Students *should not* go on to the second level of any Art class until ALL foundation courses have been met or are taken concurrently.
ARTB 1201 2D Design (3)
ARTB 1202 3D Design (3)
ARTB 1203 Drawing I (3)
ARTB 1206 Concept Studio (3)

Breadth (6 credits)
Students *should not* take a third class in their discipline until breadth courses have been completed or are taken concurrently.

2D Breadth: take one 2000 level course from an area other than the area of focus: drawing, digital media, graphic design, illustration, painting, photography, or print media.

3D Breadth: take one 2000 level course from an area other than the area of focus: ceramics, fibers, installation art, metalsmithing/jewelry, or sculpture.

Area of Focus (9 credits)
Students will take three classes as specified for the area of focus. Transfer students must take at least six of these hours at UNC Charlotte.

Ceramics (ARTC)
Option 1:
ARTC 2171 Ceramics Handbuilding
ARTC 3171 Ceramic Sculpture
ARTC 3273 Ceramic Studio 3

Option 2:

ARTC 2172 Ceramics Wheel 1
ARTC 3172 Ceramics Wheel 2
ARTC 3273 Ceramic Studio 3

Drawing (ARTD)
ARTB 1205 Figure Drawing 1
ARTD 2139 Drawing 2
ARTD 3134 Figure & Anatomy

Fibers (ARTF)
ARTF 2151 Fibers 1
ARTF 3352 Fibers 2: Surface Design 1
ARTF 3353 Fibers 3: Constructed Textiles 1

Graphic Design (ARTG)
ARTG 2180 Graphic Design Methods
ARTG 2181 Graphic Design 1
ARTG 3183 Graphic Design 2*
**ARTM 2105 Digital Media is a prerequisite for ARTG 3183. This will count as your 2D Breadth requirement.*

Illustration (ARTL)
ARTL 2186 Illustration 1
ARTL 3186 Illustration Media and Methods
ARTB 1205 Figure Drawing I

Painting (ARTP)
ARTP 2131 Painting 1
ARTP 3161 Mixed Media: Works on Paper
ARTP 3131 Abstract Painting

Photo (ARTT)
ARTT 2191 Photographic Media 1
ARTT 3391 Black & White Printing
ARTT 3191 Camera & Light

Print Media (ARTR)
ARTR 2161 Print Media: Serigraphy, Relief & Mixed Media
ARTR 2162 Print Media: Intaglio Methods
ARTR 3162 Print Media 3

Sculpture (ARTZ)
ARTZ 2141 Sculpture 1: Construction
ARTZ 3142 Sculpture 2: Casting & Fabrication
ARTZ 3243 Sculpture 3: Additive / Subtractive / Assemblage

BACHELOR OF FINE ARTS WITH A STUDIO CONCENTRATION (B.F.A.) - 80 credits

Concentration Options:
- Ceramics
- Fibers
- Graphic Design
- Illustration
- Painting
- Photography
- Print Media
- Sculpture
- Cross-disciplinary concentration with special permission only

All students studying studio art begin as an Art major in the B.A. degree program. Those seeking B.F.A. status must earn a minimum GPA of 2.0 and a 'C' or above in Art History Surveys 1 and 2, 2D Design, 3D Design, Drawing 1, Concept Studio, Figure Drawing, and the specified 2000 level class in the intended concentration area. This should be done within the first three semesters of study in order to complete the degree requirements in four years.

While enrolled in the designated 3000 level course in the intended concentration, students must also enroll in the B.F.A. Portfolio Review class. This should be done during the fourth semester of study in order to complete the degree requirements in four years. Students assemble a more sophisticated portfolio of work in this class, and will submit that portfolio to the B.F.A. Review Committee. Students whose portfolios are accepted must fill out a Change of Major/Minor form to record the new degree status.

No students will be allowed to enroll in classes with B.F.A. prerequisite status unless they have earned a passing grade in the B.F.A. Portfolio Review class.

Students seeking more than one studio concentration must register for the B.F.A. Portfolio Review class for each concentration and submit separate portfolios.

Students who do *not* pass the B.F.A. Portfolio Review class the first time may retake it once. If they fail it a second time they may choose to pursue a different concentration or simply finish the requirements for the B.A. degree.

REQUIREMENTS FOR BFA IN ART

Art History Courses (15 credits)
ARTH 1211 Art History Survey I (3)
ARTH 1212 Art History Survey II (3)
ARTH 2110 Contemporary Art History (3)
ARTH xxxx Art History Elective (3)
ARTH xxxx Art History Elective (3)

Foundation Studio Courses (15 credits)
Students *should not* go on to the second level of any Art class until ALL foundation courses have been met or are taken concurrently.
ARTB 1201 2D Design (3)
ARTB 1202 3D Design (3)
ARTB 1203 Drawing I (3)
ARTB 1205 Figure Drawing I (3)
ARTB 1206 Concept Studio (3)

Introductory Studios (15 credits)
Select five classes from at least four different areas. Choose two courses from Group 1 and two courses from Group 2. The fifth class may come from either group.

Up to three classes may be specified by a concentration to meet its requirements.

Group 1 *(choose two):*

Area 1
ARTC 2171 Ceramics Handbuilding
ARTC 2172 Ceramics Wheel 1

Area 2
ARTF 2151 Fibers 1
ARTF 2255 Mixed Media Book Arts and Papermaking

Area 3
ARTZ 2140 Installation Art
ARTZ 2141 Sculpture 1: Construction,
ARTZ 2146 Metalsmithing/Jewelry

Group 2 *(choose two)*:

Area 4
ARTD 2136 Drawing 2

Area 5
ARTG 2180 Graphic Design Methods
ARTG 2181 Graphic Design 1

Area 6
ARTL 2186 Illustration 1

Area 7
ARTM 2105 Digital Media

Area 8
ARTP 2131 Painting 1

Area 9
ARTR 2161 Print Media: Serigraphy, Relief & Mixed Media
ARTR 2162 Print Media: Intaglio Methods

Area 10
ARTT 2191 Photo Media 1

Art Elective (3 credits)

Choose a 2000 or higher level class in studio, art history, art education, independent study, or internship Students selecting an art history class will automatically earn an art history minor.

Advanced Courses (27 credits)

Studio Art Electives: choose any two studio courses at the 3000 or 4000 level. They may include studio internships and independent study classes in studio. Courses may be recommended by the concentration area.

Concentration Requirements: seven courses at the 3000 and 4000 level will be specified by the concentration area. Between one and three of these courses will be out of the concentration area. Requirements are available in the Department of Art and Art History office or online at www.art.uncc.edu.

Other (5 credits)
ARTA 3201, 3202, 3203 B.F.A. Portfolio Review (1)
ARTA 4600 Senior Seminar (3) (W,O)
ARTA 4601 B.F.A. Senior Exhibit (1)

SUGGESTED CURRICULUM FOR BFA CANDIDATES (ART REQUIREMENTS ONLY)

Freshman Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ARTB 1201 2D Design –or– ARTB 1202 3D Design	3	ARTB 1201 2D Design –or– ARTB 1202 3D Design	3
ARTB 1203 Drawing I	3	ARTB 1205 Figure Drawing I	3
ARTB 1206 Concept Studio	3	ARTH 1212 Art History Survey II	3
ARTH 1211 Art History Survey I	3	ART_ 2xxx Introductory Studio *(1st 2000 level class in concentration)*	3

Sophomore Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ART_ 2xxx Any Introductory Studio or *(1st 3000 level class in concentration)*	3	ART_ 3xxx 1st or 2nd 3000-level class in concentration	3
ART_ 2xxx Any Introductory Studio	3	ART_ 2xxx Any Introductory Studio	3
ART_ 2xxx Any Introductory Studio	3	ART_ xxxx Any Studio class	3
ARTH 2110 Contemporary Art History	3	ARTA 3201, 3202, or 3203 (B.F.A. Portfolio Review Class)	1
		ARTH xxxx Any Art History	3

BACHELOR OF ARTS IN ART HISTORY - 36 credits

Students declare an Art History major by indicating this on the application to UNC Charlotte, or by filling out a Change of Major/Minor form to record Art History major status. There is no portfolio submission for this degree. A 2.0 GPA is required for admission to this major. Matriculated and transfer students who do not meet requirements for admission to the program because of special circumstances may petition the Art History Faculty for acceptance into the program. Students seeking to apply course work taken at other institutions to the Art History major must provide *copies of the official course description and a syllabus* for each course requested for consideration.

REQUIREMENTS FOR B.A. IN ART HISTORY

Core Courses
12 hours of Art History consisting of:

ARTH 1211 Art History Survey I (Prehistoric to 1300 C.E.)
ARTH 1212 Art History Survey II (1300 to 1940)
ARTH 2110 Contemporary Art (1940-Present)
ARTH 3114 Art History Methods
--or--
ARTH 3115 Honors Art History Methods

ARTH 1211 and 1212 are normally taken in the freshman year; ARTH 2110 is normally taken in the sophomore year or as soon as possible after declaring the major. ARTH 3114 or ARTH 3115 (taught simultaneously) may be taken when the other three core courses have been completed.

Elective Coursework
18 hours of Art History, of which:

- No more than 6 hours are at the 2000 level
- At least 3 hours are in Non-Western Art History
- At least 3 hours are in Ancient Art History (Prehistoric to 500 CE)
- At least 3 hours are in Medieval, Renaissance or Baroque Art History (500-1700 CE)
- At least 3 hours are in Recent Art History (1700 CE-Present)
- At Least 9 hours are at the 3000 level

2000-level elective Art History courses:

ARTH 2001 Topics in Art History
ARTH 2113 Arts of Africa, the Pacific & the Americas
ARTH 2140 Medieval Art
ARTH 2190 Art of the United States

3000-level elective Art History courses in Non-Western Art:

ARTH 3317 Maya Art
ARTH 3318 Mexica (Aztec) Art
ARTH 3319 Andean Art

3000-level elective Art History courses in Ancient Art:

ARTH 3320 Ancient Egyptian & Near Eastern Art
ARTH 3322 Ancient Greek Art
ARTH 3323 Ancient Roman Art

3000-level elective Art History courses in Medieval, Renaissance, or Baroque Art:

ARTH 3349 Gothic Art
ARTH 3350 Northern Renaissance Art
ARTH 3351 Italian Renaissance Art
ARTH 3360 Northern Baroque Art

3000-level elective Art History courses in Recent Art

ARTH 3100 Field Study in Visual Art
ARTH 3380 19th Century Art in Europe
ARTH 3390 20th Century Art in Europe
ARTH 3393 History of Photography
ARTH 3394 Women and Art

Senior Seminar
3 hours of Art History

Students majoring in Art History must complete one of the following courses:

ARTH 4601 Problems in Pre-Columbian Art History
ARTH 4603 Problems in Ancient Art History
ARTH 4605 Problems in Renaissance Art History
ARTH 4609 Problems in Recent Art History

Related Work
3 hours of credit

Students majoring in Art History must complete one of the following courses:

AFRS 2105 Black Images in the Media
AFRS 2203 African-American Culture I
AFRS 2206 African Literature, Music and Art
AMST 3090 Topics in American Film
AMST 3100 Introduction to American Studies
ANTH 2050 Topics in Archaeology
ANTH 2122 Beliefs, Symbols and Rituals
ANTH 2151 Introduction to Archaeology
ARCH 4211 Architectural History I
ARCH 4212 Architectural History II
ENGL 2106 Film Criticism
GEOG 2100 Maps and Graphs
GERM 3160 Survey of German Film
HIST 2130 Introduction to Historic Preservation
HIST 2135 Introduction to Museums & Historic Sites
HIST 3010 History and Culture Through Film, Non-Western
HIST 3011 History and Culture Through Film
HIST 3281 American Cities
LTAM 3360 Studies in Hispanic Film
PHIL 3225 Aesthetics
POLS 3104 Mass Media
RELS 3101 Greek Myths and Religions
RELS 3163 The Religious Art and Architecture of India
RELS 3212 Films and Identity
RELS 4127 Material Christianity
RUSS 3203 Russian Civilizations and Culture
SOCY 2112 Popular Culture
WMST 2110 Women and the Media

K-12 ART TEACHER LICENSURE

The Department of Art and Art History offers a program of Art and professional Education courses to prepare students for K-12 Teacher Licensure in North Carolina. All students interested in K-12 teaching should contact the Coordinator of Art Education as soon as possible after acceptance to UNC Charlotte.

Students seeking an undergraduate degree with simultaneous licensure must be an Art major in the B.A. or B.F.A. degree programs. Licensure is not granted with the B.A. in Art History degree. Students must complete all requirements for either of the degrees in Art, take four additional classes in Art Education including student teaching, take five additional classes in professional education, and meet other specific programmatic requirements mandated by the State of North Carolina. All Art Education advising is conducted by the Coordinator of Art Education.

Students must apply separately for the Art Teacher Education Program, administered jointly by the Department of Art and Art History and the College of Education. Forms for the degree requirements and all other licensure requirements are available in the Department Office or online (www.art.uncc.edu).

Art Education Classes
24 credits

Art Education students must complete Department of Art and Art History requirements for either the B.A. in Art or B.F.A. in Art as well as additional State of North Carolina requirements. Students must also take the following courses:

ARTE 1121 Introduction to Art Education (3)
ARTE 4121 Elementary Art Methods (3)
ARTE 4122 Secondary Art Methods (3)
ARTE 4467 Student Teaching in Visual Art (15)

Professional Education Classes
15 credits

EDUC 2100 Introduction to Education and Diversity in Schools (3)
EDUC 4290 Modifying Instruction for Learners with Diverse Needs (3)
EIST 4100 Computer Applications in Education (3)
MDSK 3160 Learning and Development: Birth through Adolescence (3)
SPED 2100 Introduction to Students with Special Needs (3)

Prerequisites for Admission to the Art Teacher Education Program:

- ARTE 1211 with an earned grade of 'B' or above
- EDUC 2100 and SPED 2100 with earned grades of 'C' or above
- Passing scores on all 3 sections of the Praxis I exams in reading, writing, and mathematics
- Overall 2.5 GPA in at least 45 earned hours
- GPA of 2.75 in all Art and Education classes
- Recommendation from the Coordinator of Art Education

Students must be formally admitted to the Teacher Education Program *before* continuing with the following Education and Art Education classes, as listed here:

ARTE 4121 Elementary Art Methods
ARTE 4122 Secondary Art Methods
ARTE 4467 Student Teaching in Visual Arts
EDUC 4290 Modifying Instruction for Learners with Diverse Needs
EIST 4100 Computer Applications in Education
MDSK 3160 Learning & Development

Prerequisites for Admission to Student Teaching (Required of all candidates by the College of Education and Art Teacher Education):

- Prior admission to Art Teacher Education
- Overall GPA of at least 2.5
- A GPA of 2.75 and grades of 'C' or better in the professional Education and Art courses
- Completion of all other coursework
- Recommendation from the Coordinator of Art Education
- Submission of application packet to Office of Field Experiences (OFE)

Scheduling of Art Education Courses, Professional Education courses, and Licensure requirements:

Freshman year: Take EDUC 2100 and or SPED 2100. Enroll in ARTE 1121 during the spring semester and take Praxis I at the end of the spring semester.

Sophomore year: Apply to Art Teacher Education program during the fall semester. In the spring take ARTE 4122 and MDSK 3160.

Junior year: Take EIST 4100 and EDUC 4290 during the fall semester. Begin the Electronic Portfolio during the fall semester. In the spring take ARTE 4122 and apply for Admission to Student Teaching during the spring semester.

Senior year: Enroll in student teaching fall or spring and complete E Portfolio.

Lateral Entry or Post-baccalaureate students (with an earned undergraduate Art degree) seeking K-12

Teacher Licensure will have different requirements than traditional first degree students. It is imperative to contact the Coordinator of Art Education to determine the requirements and course of study.

MINORS IN STUDIO ART AND ART HISTORY

Students with any major (except Art) may earn a 21 credit hour minor in (studio) Art and students with any major (except Art History) may earn an 18 credit hour minor in Art History. Students must earn a 'C' or above in all classes applied to the (studio) Art or Art History minor. Submit a completed Change of Major/Minor form to record this status.

Students pursuing an Art or Art History minor must seek permission from instructors to register for any class with 'Majors only' status. Permission is granted at the discretion of the instructor and is not guaranteed.

REQUIREMENTS FOR THE MINOR IN STUDIO ART

- ARTH 1211 Art History Survey 1 –or–
  ARTH 1212 Art History Survey 2
- ARTB 1201 2D Design –or–
  ARTB 1202 3D Design
- ARTB 1203 Drawing 1
- Any four 2000 level (or above) studio classes (not including *ARTA, ARTE or ARTH* classes)

Students will need to check the *UNC Charlotte Undergraduate Catalog* course descriptions to determine all course prerequisites. Some courses will require prerequisites that do not fit into this 21 credit minor, but students will still need to take all of them. These prerequisite courses will count as general electives.

At least 12 of the credits towards the Studio Art minor must be taken at UNC Charlotte.

REQUIREMENTS FOR THE MINOR IN ART HISTORY

- ARTH 1211 Art History Survey 1
- ARTH 1212 Art History Survey 2
- Any four more Art History classes

At least 12 of the credits towards the Art History minor must be taken at UNC Charlotte.

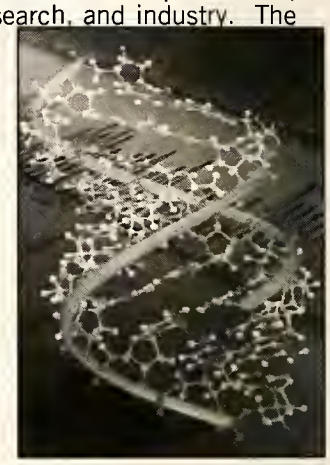
Department of Biology

www.bioweb.uncc.edu

Chair and Professor: *M. Hudson*

Belk Distinguished Professor: *K. Bost*
Cone Distinguished Professor: *J. Oliver*
Professors Emeritus: *N. Edwards, P. Hildreth, J. Matthews, E. Menhinick, M. B. Thomas*
Professors: *L. Barden, M. Clemens, Y. Huet-Hudson, L. Leamy, L. Mellichamp, T. Reynolds, S. Schneider*
Associate Professor Emerita: *D. Langsam, R. Ostrowski, J. Travis*
Associate Professors: *M. Hughes, I. Marriott, I. McKillop, S. Peters, C. Richardson, S. Sell, T. Steck, J. Zhang*
Assistant Professor Emeritus: *D. Bashor*
Assistant Professors: *D. Dreau, J. Goodliffe, V. Grdzelishvili, M. Parrow, A. Ringwood, L. Schrum, I. Sokolova, A. Sukhotin, C. Yengo*
Lecturers: *N. Bryska, J. Flores, P. Gross, A. Hagler, M. Lowder, M. Norris, J. Warner, C.B. Wolfe*

The biological sciences are important in many areas of human endeavor encompassing wide-ranging career opportunities in medicine and allied health professions, education, environment, research, and industry. The Department of Biology offers undergraduate programs leading to the Bachelor of Arts degree and the Bachelor of Science degree. The B.A. degree provides a firm foundation in the basic principles of biology as background to understanding the biological world, and as preparation for many careers, such as medical/pharmaceutical sales; while the B.S. degree provides opportunity for advanced studies in academic or professional programs. The minor in Biology is offered for students who desire some experience in biology as an adjunct to their major.



Biology programs can be tailored to fit the individual student's needs and interests. Through course selection, the student can emphasize many areas within biology: plant sciences, including horticulture, systematics, and plant physiology and ecology; animal sciences, which include behavior, morphology and physiology; microbial science, including virology and microbial physiology; cellular/molecular studies, such as genetics, development, immunology and biotechnology; and environmental sciences, including ecology and evolution. Opportunities for individualized instruction occur at every level from undergraduate research and tutorials with faculty in the junior and senior courses to honors research projects in the senior year. A program in medical technology is offered in cooperation with other institutions.

Students planning to declare a major in Biology must earn a C or better in the lecture part (3 hours) of BIOL 2120, BIOL 2130, CHEM 1251, and CHEM 1252 before being accepted into the major. Students

who plan to be Biology majors but have not completed this requirement will be listed as "pre-biology majors" (PBIO) by the registrar.

A student who has two successive semesters with a cumulative GPA in Biology of less than 2.0 is ineligible for continuation in bachelors degree programs in Biology.

BACHELOR OF ARTS

A major in Biology leading to the B.A. degree consists of 32 semester hours of biology including:

1.) Core sequence of General Biology I (BIOL 2120 + Lab) and General Biology II (BIOL 2130 + Lab)
2.) Four area courses: Cell (BIOL 3111 + Lab), Ecology (BIOL 3144), Genetics (BIOL 3166), and Animal or Plant Physiology (BIOL 3272 or 3273)
3.) Senior Seminar (BIOL 4600)

The B.A. degree requires a total of five biology laboratories counting the two required introductory labs. Additional requirements are CHEM 1251, 1252, and 2130 or 2131, with associated labs (CHEM 2131L is the required lab for CHEM 2130), three semester hours of mathematics (MATH), and three semester hours of statistics (STAT). At least 12 hours of biology must be taken at UNC Charlotte. Enrolling in any Biology course requires a grade of C or better in ALL prerequisites for that course.

BACHELOR OF SCIENCE

In addition to the 32 hours of biology required for the B.A. degree, a student working toward the B.S. degree is required to take 12 additional hours in biology for a total of 44 hours, two additional biology laboratories for a total of seven, CHEM 2131 and 2132 with associated laboratories, PHYS 1101, 1102 and associated labs, and three additional hours of mathematics (MATH).

SUGGESTED CURRICULUM FOR B.A. OR B.S. IN BIOLOGY

Following is the sequence in which required courses should be taken, even if they are not taken during the year indicated:

Freshman year: BIOL 2120 + BIOL 2120L and BIOL 2130 + BIOL 2130L; CHEM 1251 + CHEM 1251L and CHEM 1252 + CHEM 1252L

Sophomore year: CHEM 2130 *(B.A. only)* or 2131 + CHEM 2131L; BIOL 3111 + BIOL 3111L, BIOL 3144, and BIOL 3166; STAT 1221; for B.S. CHEM 2132 + CHEM 2132L

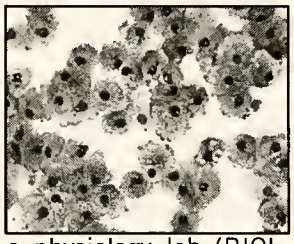
Junior year: BIOL 3272 or BIOL 3273, then advanced electives of any number

Senior year: BIOL 4600 and advanced electives of any number

See the Department of Biology for a more detailed schedule for the four-year program leading to the B.A. or B.S., including schedules for each of the options.

BACHELOR OF SCIENCE WITH AN OPTION IN CELL BIOLOGY/PHYSIOLOGY

The B.S. in Biology with an option in Cell Biology/Physiology consists of 44 hours. These include the core biology courses, General Biology I (BIOL 2120, BIOL 2120L) and General Biology II (BIOL 2130, BIOL 2130L); the four area courses, Cell (BIOL 3111), Ecology (BIOL 3144), Genetics (BIOL 3166), and Plant or Animal Physiology (BIOL 3272 or 3273); and Senior Seminar (BIOL 4600). In addition, a physiology lab (BIOL 3272L or BIOL 3273L) must be taken. Three additional laboratories from among the area courses or track electives must also be taken to complete the requirements of the B.S. The track also requires that students choose one course from each of the following areas: (1) **Subcellular*** topics, (2) **Structure and Function***, and (3) **Advanced Physiology***. Consult the Department of Biology for a current list of approved courses in these areas. A minimum of nine additional hours should be chosen, in consultation with an advisor from appropriate electives depending upon the student's interests. Students are encouraged to take Investigations in Biology (BIOL 3900) or Honors in Biology (BIOL 4700, BIOL 4701) under the direction of one of the Cell Biology or Physiology faculty. Students are responsible for completing all of the chemistry, math, and physics courses required for a B.S. in Biology.



BIOL 2120, BIOL 2120L General Biology I & Lab (4)
BIOL 2130, BIOL 2130L General Biology II & Lab (4)
BIOL 3111 Cell Biology (3)
BIOL 3144 Ecology (3)
BIOL 3166 Genetics (3)
BIOL 3272, BIOL 3272L Plant Physiology & Lab
OR BIOL 3273, BIOL 3273L Animal Physiology & Lab (4)
BIOL 4600 Senior Seminar (1)
Subcellular topic (3)
Structure and Function (3)
Advanced Physiology (3)

Total = 32 credit hours

*Students must choose one course each from each of the following sub areas.

- **Subcellular topics:** Cell Physiology (BIOL 4171), Molecular Biology (BIOL 4199), biochemistry (CHEM 4165), Advanced Cell Biology (BIOL 4000), DNA Profiling (BIOL

4000), Biotechnology at the Workbench (BIOL 4000), Cellular Neuroscience (BIOL 3271).
- **Structure and Function:** Comparative Vertebrate Anatomy (BIOL 4293), Medical Genetics (BIOL 4167), Systems Neuroscience (BIOL 3274), or Microbiology (BIOL 4250)
- **Advanced Physiology:** Immunology (BIOL 4251), Microbial Physiology and Metabolism (BIOL 4257), Endocrinology (BIOL 4277), Neurobiology (BIOL 4279), or Cardiovascular Physiology (BIOL 4000).

BACHELOR OF SCIENCE WITH AN OPTION IN ECOLOGY/ENVIRONMENTAL BIOLOGY

A B.S. degree in Biology with an option in Ecology/Environmental Biology consists of 44 hours of biology including all required courses for a B.S. degree in Biology plus Ecology Laboratory (BIOL 3144L), Biometry (BIOL 4121), and Environmental Problems (BIOL 4000). Each student must take at least four courses in one of the following sub-areas of environmental biology. Students are also recommended to take ESCI 1101 and Investigations in Biology (BIOL 3900) under the direction of one of the environmental biology faculty. Students are responsible for all chemistry, mathematics, and physics requirements for a B.S. in Biology.

- **Plant Ecology**: Plant Systematics (BIOL 4221) or Field Botany (BIOL 3229), Dendrology (BIOL 4229), Microbiology (BIOL 4250), Advanced Ecology (4144), Field Entomology (BIOL 4000), Horticulture (BIOL 3202), Evolution (BIOL 4111), Soil Science (ESCI 3210).
- **Animal Ecology**: Invertebrate Zoology (BIOL 3231), Vertebrate Zoology (BIOL 3233) or Mammalogy (BIOL 4235), Animal Behavior (BIOL 4243), Wildlife Biology (BIOL 4234), Microbiology (BIOL 4250), Advanced Ecology (BIOL 4144), Field Entomology (BIOL 4000), Evolution (BIOL 4111).
- **Environmental Assessment**: Plant Systematics (BIOL 4221) or Field Botany (BIOL 3229), Environmental Biotechnology (BIOL 4000), Microbiology (BIOL 4250), Wildlife Biology (BIOL 4234), Limnology and Oceanography (BIOL 4149), Dendrology (BIOL 4229), Advanced Ecology (BIOL 4144), Soil Science (ESCI 3210), Hydrological Processes (ESCI 4140) or Fluvial Processes (ESCI 4155) or Ecotoxicology (BIOL 4000).
- **Aquatic Ecology**: Limnology and Oceanography (BIOL 4149), Invertebrate Zoology (BIOL 3231), Microbiology (BIOL 4250), Advanced Ecology (BIOL 4144), Hydrological Processes (ESCI 4140) or Fluvial Processes (ESCI 4155), Quantitative Analysis (CHEM 3111), Ecotoxicology (BIOL 4000).
- **General**: Course program to be arranged in consultation with the Ecology/Environmental Biology Faculty.

BACHELOR OF SCIENCE WITH AN OPTION IN MICROBIOLOGY

A major in Biology leading to a B.S. degree with an option in microbiology consists of 46 hours of biology including:

1.) Core sequence of General Biology I (BIOL 2120, BIOL 2120L) and General Biology II (BIOL 2130 and BIOL 2130L)
2.) Four area courses: Cell (BIOL 3111), Ecology (BIOL 3144), Genetics (BIOL 3166), and Plant or Animal Physiology (BIOL 3272, BIOL 3272L, or BIOL 3273, BIOL 3273L)
3.) Senior Seminar (BIOL 4600)
4.) Core of microbiology courses: Microbiology (BIOL 4250, BIOL 4250L), Microbial Physiology and Metabolism (BIOL 4257), Immunology (BIOL 4251), Pathogenic Bacteriology (BIOL 4256), and either Bacterial Genetics (BIOL 4255) or Molecular Biology (BIOL 4199)
5.) Six credit hours from the following list of electives (at least one of which must include a laboratory): The Fungi (BIOL 4233), Virology (BIOL 4259), Parasitology (BIOL 4233), Advanced Immunology (BIOL 4291), Bacterial Genetics or Molecular Biology if not taken as part of the "core", Recombinant DNA Techniques (BIOL 4168), Host-Parasite Interactions (BIOL 4000), Immunological Methods (BIOL 4000), Biotechnology at the Workbench (BIOL 4000), Honors Research (Microbiology) (BIOL 4700, BIOL 4701), and Undergraduate Research (Microbiology) (BIOL 3900)
6.) CHEM 2132 with associated lab, PHYS 1101, PHYS 1102 and associated labs, and nine hours of mathematics including STAT 1221

BACHELOR OF ARTS WITH AN OPTION IN MEDICAL TECHNOLOGY

Upon satisfactory completion of training at Wake Forest University Baptist Medical Center School of Medical Technology, a student may receive a B.A. degree in Biology from UNC Charlotte. (It is possible to obtain a B.S. degree by careful planning with the advisor, although a B.S. degree will typically require a longer period of time than will the B.A. degree). The student must take General Biology I (BIOL 2120, BIOL 2120L), General Biology II (BIOL

2130, BIOL 2130L), Genetics (BIOL 3166), Microbiology (BIOL 4250, BIOL 4250L), Immunology (BIOL 4251), Animal Physiology (BIOL 3273), Seminar (BIOL 4600), and 16 hours of chemistry (CHEM 1251, CHEM 1251L, CHEM 1252, CHEM 1252L CHEM 2131, CHEM 2131L, and chemistry elective); have a total of 24 hours of biology and a total of four laboratories in biology at UNC Charlotte; and have a 2.0 grade point average overall and in the major at the end of the junior year. The student must have a total of 90 hours including 24 hours of biology at UNC Charlotte; the remaining 30 hours and eight hours of biology will be accepted from the School of Medical Technology. The final 30 hours counted toward the degree, and the last eight hours counted toward the major prior to entering a School of Medical Technology must be taken at UNC Charlotte. Gaining admission to the School of Medical Technology is the responsibility of the student. Additional information is available from the Department of Biology.

MINOR IN BIOLOGY

A minor in Biology requires 18 hours, including the BIOL 2120 and BIOL 2130 sequence or the BIOL 1110 and BIOL 1115 sequence and associated labs (only one of these sequences is allowed), other courses at the 1000 level are acceptable; a total of three laboratory courses; at least one three-hour course (not necessarily with lab) at or above the 3000 level; and a GPA of at least 2.0 in the minor. Students are responsible for meeting all Biology course prerequisites and corequisites. At least six hours must be taken at UNC Charlotte.

MINOR IN BIOTECHNOLOGY

The Minor in Biotechnology Program is an interdisciplinary program housed within the College of Arts & Sciences and is designed for Biology and Chemistry majors interested in careers in the biotechnology field. To obtain a Minor in Biotechnology, students will complete a series of required and optional interdisciplinary courses offered in the departments of biology, chemistry, and civil engineering, and complete a biotechnology-based internship in a regional government, industry, or academic laboratory. Students will have some flexibility to choose courses that reflect their specific area of emphasis within the biotechnology field.

Students must have at least an overall GPA of 3.0 and a 3.0 GPA in their major to participate in the program. The number of participating students will be determined by the number of available internship positions. Students will declare their intention to obtain this Minor by registering for the internship course, typically the beginning of their senior year. A maximum of nine credit hours applied towards a major degree program can also be applied towards the Minor in Biotechnology.

TEACHER EDUCATION

The Department, in collaboration with the Department of Middle, Secondary, and K-12 Education, offers a program of biology and professional education courses to prepare students for 9-12 teacher licensure in North Carolina. Students interested in biology education should declare this interest during the first semester of the sophomore year to obtain appropriate advising and prepare for formal admission to a teacher education program. Students should contact the secondary education advisor for teacher education within the Department, as well as the Office of Student Academic Services in the College of Education for information about the requirements for admission to teacher education, coursework, and the culminating student teaching experience. Additional information about teacher education may be found in the College of Education section of this *catalog*.

HONORS PROGRAM IN BIOLOGY

The Honors Program is a research program for students majoring in Biology. Students interested in this program and who meet the admissions requirements should contact the Honors Coordinator in the Department of Biology.

Admission. Students are invited to participate in the program during their junior year by the Department Honors Committee. To qualify, a student must have completed 60 semester hours, including at least 15 hours at UNC Charlotte. At least 36 of the completed hours must be in science and mathematics. Students must have a 3.4 overall grade point average. An Honors advisor and a supervisory committee are appointed for each student.

Courses. To graduate with Honors, a student must complete BIOL 4601 (Honors Seminar), BIOL 4700 (Honors Research I) and BIOL 4701 (Honors Research II) with a *B* or better in each of the three courses.

Certification Requirements. A cumulative grade point average of 3.4 or greater must be maintained. An Honors thesis is required and the student must present the results of their project in an appropriate forum.

COOPERATIVE EDUCATION PROGRAM

Students majoring in Biology may obtain practical work experience while pursuing their degrees. The Cooperative Education Program allows qualified students either to alternate semesters of academic study with semesters of work experience or to combine academic study and work during the same semester. The work experience is arranged by the University Career Center and must be approved by the Department of Biology. Placements are based on a student's academic interests and on the availability of appropriate positions and are carried out under the supervision of a Biology faculty member who serves as co-op advisor. Work semesters are followed by participation in the Biology Cooperative Education Seminar.

Department of Chemistry

www.chem.uncc.edu

Chair and Professor: *B. Donovan-Merkert*
Charles H. Stone Professor Emeritus: *S. Burson*
Professors Emeritus: *Allen, S. Bush, L. Daignault, R. Gibson, J. Kuppers, T. Mattingly, T. Walsh*
Charles H. Stone Professor: *T. DuBois*
Celanese Acetate Distinguished Professor: *K. Gonsalves*
Professors: *J. Crosthwaite, C. Ogle, D. Rabinovich, J. Risley*
Associate Professors: *B. Brown, B. Cooper, D. Jones, J. Krueger, J. Poler, W. Sisk*
Assistant Professors: *El-Kouedi, M. Etzkorn, T. Schmedake*
Teaching Associate Professor: *J. Hovick*
Lecturers: *C. Carlin, J. Merkert, M. Murphy, C. Striplin*

Chemistry is a discipline fundamental to a wide variety of careers in industry, research, and the allied health fields. A strong foundation in chemistry is necessary for careers in medicine, molecular biology, biochemistry, industrial or government research, pharmacy, high school teaching, and chemical engineering. A background in chemistry may also be useful for careers in chemical sales, industrial management, business administration, and environmental management.

The Chemistry Department offers two B.S. degree programs approved by the American Chemical Society (ACS), two non-ACS-certified B.S. degree programs and a research-based M.S. degree, which provide the background necessary for a career in industry or for further graduate studies in chemistry and related fields. In addition, a B.A. degree in chemistry is available for students who plan to pursue a career in chemical industry, teaching, or professional studies in areas such as medicine, dentistry, veterinary medicine, and optometry. Degree requirements for the B.S., B.A., and B.S./M.S. degree programs are available online at www.chem.uncc.edu. A minimum chemistry GPA of 2.0 is required in the B.S. and B.A. degree programs.

Students are urged to consult with their academic advisors every semester. Students should work with their academic advisors to develop a long-range plan for academic progress rather than merely selecting courses on a semester-by-semester basis.

Programs leading to careers in medical technology, pharmacy, and chemical engineering are available in cooperation with other institutions. Please see the "Preparation for Professional Schools" section in this *Catalog* for details.

BACHELOR OF SCIENCE

The B.S. degree is recommended for students planning to begin careers as chemists with the baccalaureate degree and those preparing for graduate study in chemistry.

A major in Chemistry leading to the ACS-certified B.S. degree consists of a minimum of 46 semester hours of chemistry, including CHEM 1251, 1251L, 1252, 1252L (or 1253L), 2131, 2132, 2131L, 2132L (or 2136L), 3111, 3141, 3142, 3141L, 3142L, 3695, 4111, 4121, 4133, 4165, one semester of 4695, one semester of 4696, and two semesters of 4900. Students wishing to pursue the non-ACS-certified B.S. degree (minimum of 45 semester hours in chemistry) replace CHEM 4165 with two credits of 4000-level chemistry courses *that must be approved by the Chemistry Department.* Related work in mathematics and physics must include MATH 1241, 1242, PHYS 2101, 2102, 2101L, and 2102L and two additional math courses: MATH 2241, 2242, 2164, 2171, STAT 3128, or a Department-approved math course.

All students who earn a degree within the College of Arts and Sciences are required to demonstrate proficiency in the foreign language of their choice through the 1202 level. Proficiency in a foreign language can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same foreign language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) by transferring in with an A.A., A.S. or A.F.A. degree; or (6) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

This requirement will apply to all students entering any degree program within the College of Arts and Sciences Fall 2005 and beyond. Students enrolled in the University prior to Fall 2005 but not enrolled in a degree program in the College of Arts and Sciences Fall 2005 and beyond will be subject to this requirement.

Although all students in the College of Arts and Sciences are subject to the 1202 proficiency requirement, students in select departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. All students in the College of Arts and Sciences should consult with their major department to determine whether or not they are required to complete the intermediate

proficiency requirement as part of their major or related coursework. *The B.S. degree in chemistry does not require proficiency in a foreign language at the intermediate level.* However, all students majoring in the B.S. program are required to satisfy the UNC Charlotte general education requirements.

It should also be noted that some graduate programs require a proficiency in a foreign language. *Graduate programs in chemistry typically do not require proficiency in a foreign language.*

BACHELOR OF SCIENCE WITH OPTION IN BIOCHEMISTRY

A major in Chemistry with an option in Biochemistry requires a minimum of 44 semester hours of chemistry, including CHEM 1251, 1252, 1251L, 1252L (or 1253L), 2131, 2132, 2131L, 2132L (or 2136L), 3111, 3141, 3142, 3141L, 3142L, 3695, 4165, 4166, 4165L, 4111 or 4171, one semester of 4695, one semester of 4696 and two semesters of 4900 (or BIOL 3900 with special permission from the Department of Chemistry) culminating in a comprehensive written report; related work in mathematics, physics, and biology must include MATH 1241, 1242, PHYS 2101, 2102, 2101L, and 2102L, and BIOL 2120, 2130 and either 3166, 3273, 4171, or 4199, and two additional math courses: MATH 2241, 2242, 2164, 2171, STAT 3128, or a Department-approved math course. The B.S. degree will require the completion of a minimum of 122 semester hours of credit.

All students who earn a degree within the College of Arts and Sciences are required to demonstrate proficiency in the foreign language of their choice through the 1202 level. Proficiency in a foreign language can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same foreign language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) by transferring in with an A.A., A.S. or A.F.A. degree; or (6) a combination of the above methods (e.g. placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

This requirement will apply to all students entering any degree program within the College of Arts and Sciences Fall 2005 and beyond. Students enrolled in the University prior to Fall 2005 but not enrolled in a degree program in the College of Arts and Sciences Fall 2005 and beyond will be subject to this requirement.

Although all students in the College of Arts and Sciences are subject to the 1202 proficiency requirement, students in select departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. All students in the College of Arts and Sciences should consult with their major department to determine whether or not they are required to complete the intermediate proficiency requirement as part of their major or related coursework. *The B.S. degree in chemistry does not require proficiency in a foreign language at the intermediate level.* However, all students majoring in the B.S. program (even those operating under the old general degree requirements) are required to satisfy the UNC Charlotte general degree language requirements.

It should also be noted that some graduate programs require a proficiency in a foreign language. *Graduate programs in chemistry or biochemistry typically do not require proficiency in a foreign language.*

BACHELOR OF ARTS

A major in Chemistry leading to the B.A. degree consists of a minimum of 32 semester hours of chemistry and must include the following core courses: CHEM 1251, 1251L, 1252, 1252L, 2125, 2131, 2131L, 2132, 2132L, 2141, 3111, 3695, and two semesters of 4695. Related work must include MATH 1241, 1242, and a complete sequence of physics courses selected from one of the following options: (A) PHYS 1101, 1101L, 1102, 1102L; (B) PHYS 2101, 2101L, 2102, 2102L; or (C) PHYS 1102, 1102L, 2101, 2101L. The remaining 3 chemistry elective hours may be selected from CHEM 3112, 3113, 3141, 3141L, 3142, 3142L, 4111, 4121, 4133, 4134, 4135, 4165, 4165L, 4166, 4167, 4171, 4175, and 4200. The B.A. curriculum can be tailored to fit the needs of students preparing for professional schools, a career in chemistry, and secondary teaching licensure.

Preprofessional. Students majoring in Chemistry who are planning future studies in medicine, dentistry, or other allied health professions should choose CHEM 4165 and take as electives BIOL 2120 and BIOL 2130. At least one additional biology course at the 3000 or 4000 level is recommended.

Chemistry. Students planning to pursue employment in chemical industry or other careers requiring a background in chemistry should choose CHEM 3113 (or 4111) as a chemistry elective.

BACHELOR OF ARTS WITH AN OPTION IN MEDICAL TECHNOLOGY

3+1 Program: A student majoring in Chemistry may complete the departmental requirements for the B.A. degree in three years. Upon satisfactory completion of training in medical technology at Wake Forest University Baptist Medical Center School of Medical Technology, the student may receive a B.A. degree in Chemistry from UNC Charlotte. Gaining admission to an approved school of medical technology is the

responsibility of the student. A maximum of 30 hours will be accepted from the school of medical technology. Four of these hours will apply toward the requirements for the major in Chemistry. The student must have at least a 2.0 grade point average, overall and in the major, at the end of the junior year. The final 30 hours counted toward the degree and the last 12 hours counted toward the major prior to entering a school of medical technology must be taken at UNC Charlotte. The student may obtain information from the departmental advisor.

4+1 Program: Carolinas College of Health Sciences now accepts students who have earned a 4-year degree and have met prerequisites for entry into the medical technology program. The 4+1 option is available for students at any certified medical technology school. Additional information is available from the departmental advisor.

TEACHER LICENSURE IN CHEMISTRY

To meet North Carolina requirements for secondary (grades 9-12) teaching licensure in Chemistry, students must complete at least 33 hours in chemistry including: CHEM 1251, 1251L, 1252, 1252L, 2131, 2131L, 2132, 2132L, 2141, 2125, 3111, 3695, 4165, 4165L, and two semesters of 4695. Students must also complete 12 hours of physics (including PHYS 1101, 1101L, 1102, 1102L, and a physics elective), six hours of calculus (MATH 1241 and 1242), and four hours of a biology or earth science course with laboratory (BIOL 1110 + 1110L or GEOL 1200 + 1200L). Students seeking teaching licensure should consult a co-advisor in the Department of Middle, Secondary, and K-12 Education in the College of Education for detailed planning of their professional education coursework. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.

MINOR IN CHEMISTRY

A minor in Chemistry consists of 23 semester hours of chemistry including CHEM 1251, 1251L, 1252, 1252L, 2131, 2131L, 2132, 2132L, either 3111 or 4171, and three additional semester hours at the 2000 level or above. A minimum GPA of 2.0 in the minor is required. Credit toward the 23 hour total will not be given for either CHEM 4695 or 4900. Special topics courses such as CHEM 3090 and CHEM 5090 may be included with prior departmental approval.

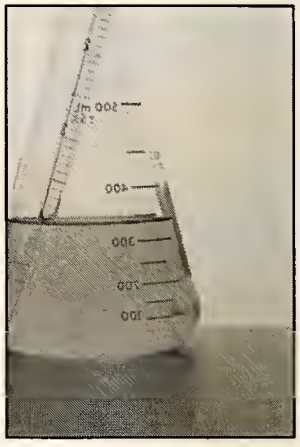
MINOR IN BIOTECHNOLOGY

The Minor in Biotechnology Program is an interdisciplinary program housed within the College of Arts & Sciences and is designed for Biology and Chemistry majors interested in careers in the biotechnology field. To obtain a Minor in Biotechnology, students will complete a series of required and optional interdisciplinary courses offered in the departments of biology, chemistry, and civil engineering, and complete a biotechnology-based internship in a regional government, industry, or academic laboratory. Students will have some flexibility to choose courses that reflect their specific area of emphasis within the biotechnology field.

Students must have at least an overall GPA of 3.0 and a 3.0 GPA in their major to participate in the program. The number of participating students will be determined by the number of available internship positions. Students will declare their intention to obtain this Minor by registering for the internship course, typically the beginning of their senior year. A maximum of nine credit hours applied towards a major degree program can also be applied towards the Minor in Biotechnology.

HONORS PROGRAM IN CHEMISTRY

This program is intended primarily for chemistry majors. It is a research-oriented program. Details are available from the Chemistry Department and the department's web page at www.chem.uncc.edu.



Admission. Consideration for admission to the program may be initiated by the student or by any faculty member. The Honors Committee of the Chemistry Department will formally approve admission. The student will formally enter the Honors Program at the beginning or halfway through the student's senior year; however, students should inquire about the Honors Program prior to the end of their junior year.

Courses. Independent research and seminars.

Certification Requirements. To obtain a degree with Honors in Chemistry, a student must successfully complete at least three hours of independent research at the Honors level, one semester of the senior seminar at the Honors level, and prepare and successfully defend an Honors thesis based on research.

COOPERATIVE EDUCATION EXPERIENCE

Students majoring in Chemistry may obtain practical work experience in chemistry before graduation by participating in the Chemistry Cooperative Education Experience any time after the completion of sophomore year and CHEM 2132. A minimum GPA of 2.5 overall and 2.5 in chemistry is required. At least two semesters of work assignments must be completed concurrent with enrollment in CHEM 3500. Advisors will assist students to design a schedule that accommodates both work assignments and the upper-division chemistry courses which are normally offered on alternate semesters. Experiences are arranged in coordination with the University Career Center.

EARLY-ENTRY INTO CHEMISTRY M.S. PROGRAM

The Early-Entry program leads to completion of all requirements for the B.S. and M.S. degrees in only five academic years and one or two summers. In this program, students complete requirements for the B.S. degree and begin graduate coursework and research in their senior, or fourth, year. The Chemistry Early-Entry program is accelerated; that is, up to six credit hours may be taken at the graduate level and double counted towards both the undergraduate and graduate degrees. Students may leave the program after four years with the B.S. degree, or they may complete an additional academic year and summer of full-time study and research to earn both the B.S. and M.S. degrees in Chemistry.

B.S. students may be admitted to the M.S. program without entrance examinations if they have a 3.2 overall GPA and at least 3.0 in their chemistry, mathematics, and physics courses, have completed the standard B.S. curriculum through at least Physical Chemistry, and have taken the Graduate Record Examination. Students should consult with the Chemistry M.S. Graduate Coordinator about their eligibility for this program and to discuss requirements for selection of a research advisor during their junior year.

The application process and all the required documentation (e.g., test scores, transcripts, letters of recommendation) are the same for Early-Entry students as for other applicants to the program. The status of the accepted early-entry applicant is provisional pending the award of the baccalaureate degree. Early-Entry M.S. students will be expected to complete the requirements for the undergraduate degree by the time they have completed 15 hours of graduate work. Students should consult with the Chemistry M.S. Graduate Coordinator about their eligibility for this program and to discuss requirements for selection of a research advisor (typically done in the second semester of their junior year).

Department of Communication Studies

www.communications.uncc.edu

Chair and Professor: *R. Leeman*
Professor: *B. Hill*
Associate Professors: *J. Crane, A. Freitag, C. Wolf Johnson*
Assistant Professors: *C. Davis, H. Gallardo, D. Grano, M. Jiang, S. Long, C. Scott, A. Stokes*
Lecturers: *D. Baker, S. Hanson, T. Horne, S. Kuntzman, C.B. Leeman, C. Spainhour, C. St. Onge*

The Communication Studies program offers training in the practice and theory of communication across a variety of contexts. Among these are public communication, health communication, organizational communication, public relations, and mass communication. In addition, students examine specific types of communication such as argumentation, debate, and persuasion.

BACHELOR OF ARTS

Admission Requirements. Students matriculated at UNC Charlotte and planning to change to or declare Communication Studies as their major must have an overall GPA of at least 2.0, and no grade less than *C* in COMM 1101 or its equivalent and COMM 2100 or its equivalent. Students may attempt COMM 2100 a maximum of two times.

Transfer students from other institutions must meet all general requirements for admission to the University. Acceptance into the Communication Studies major requires that they have no grade less than a *C* in COMM 1101 or its equivalent, and COMM 2100 or its equivalent.

Matriculated and transfer students who do not meet requirements for admission to the program because of special circumstances may petition the Department of Communication Studies for acceptance into the program.

Pre-Communication Studies. Students who apply for the Communication Studies major are initially classified as Pre-Communication Studies majors until they meet the following requirements; cumulative GPA of 2.0 or higher, and successful (grade C or better) completion of COMM 1101; COMM 2100, and either STAT 1220 or STAT 1222. Students matriculated at UNC Charlotte and planning to change or declare Pre-Communication Studies as their major must have an overall GPA of at least 2.0.

Degree Requirements. The program leading to the Bachelor of Arts degree in Communication Studies is a 120 semester hour program, including 54 hours in CORE, concentration, and work requirements in the major, and 32-53 hours in General Education requirements for the baccalaureate degree.

Communication Studies majors must also complete either a 2000-level course in a foreign language course that uses the Latin Alphabet (e.g., French, German, Italian, Portuguese, Spanish) OR a 1202-level course in a language that is not written in the Latin Alphabet (e.g., Arabic, Chinese, Greek, Japanese, Russian). Intermediate American Sign Language is accepted. Non-native English speakers may complete the foreign language requirement by passing ENGL 1101 and ENGL 1102 or the equivalent.

Core Requirements (24 hours)

All students complete 24 hours of CORE requirements designed to provide a thorough understanding of fundamental communication processes. The CORE requirements are structured into four major categories:

General Theory/Skills (12 hours)
COMM 1101 Public Speaking (3)
COMM 2100 Intro to Communication Theory (3)
COMM 2101 Introduction to Rhetorical Theory (3)
COMM 3101 Persuasion (3)

Research Methodology (6 hours)
STAT 1222 Introduction to Statistics (3)
COMM 3100 Communication Research Methods (3)

Macro-Context (3 hours)
COMM 3120 Communication & Mass Media (3) **or**
COMM 3130 Communication & Public Advocacy (3) **or**
COMM 3141 Organizational Communication (3)

Micro-Context (3 hours)
COMM 2103 Argumentation & Debate (3) **or**
COMM 2105 Small Group Communication (3) **or**
COMM 2107 Interpersonal Communication (3)

B.A. CONCENTRATIONS

Concentration Requirements (12-21hours). Students must also complete 12-21 hours of course work in a specific concentration of study. Courses that are required within a particular concentration or used as electives within the concentration cannot simultaneously be used to fulfill CORE requirements. The concentrations are designed to provide students with the opportunity to pursue more extensive study in the communication context most relevant to their professional and social goals. Four concentrations of study are offered:

Health Communication (21 hours)

The Health Communication concentration is designed for students interested in studying the relationship between communication and the quality of health care received by the patients. Emphasis will be placed on the promotion and maintenance of health, the prevention and treatment of illness, and the improvement of the health care system through effective communication.

Students choosing this concentration complete the following courses:

COMM 3055 Topics in Health Communication (3)
COMM 3115 Health Communication (3)
COMM 4115 Seminar in Health Communication (3)
COMM 4410 Communication Internship (3)

Students select nine (9) hours from the following:

ANTH 3124 Food, Nutrition and Culture
ANTH 3122 Culture, Health and Disease
COMM 3051 Topics in Health Communication (2)
COMM 4410 Professional Internship (3)
NURS/GRNT 3115 Health and the Aging Process
HLTH 2101 Healthy Lifestyles
KNES 3260 Nutrition and Health Fitness
NURS 3104 Nutrition in Health and Illness
NURS/WMST 4191 Women's Health Issues
NURS 4090 Topics in Nursing*
RELS/PHIL 3201 Meaning of Death
PHIL 3228 Healthcare Ethics
PSYC 2160 Intro to Health Psychology
PSYC 3130 Social Psychology
SOCY 4130 Sociology of Health and Illness
SOCY 4168 Sociology of Mental Health & Illness

** with approval of advisor*

Mass Media (12 hours)

The Mass Media concentration is designed for students interested in the development and critical analysis of the media as a cultural force. Contemporary issues in media criticism are explored. Students may also receive limited exposure to media production.

Students choosing this concentration complete the following courses:

COMM 3120 Communication and Mass Media (3)
COMM 4101 Media and the Law (3)

Students will complete six hours selected from the following courses:

ARTA 2219 History of Photography (3)
COMM 2120 Black Images in the Media (3)
COMM 3052 Topics in Mass Media (3)
COMM 3121 Mass Communication and Society (3)
COMM 3880 Independent Study (1-3)*
COMM 4102 Federal Interpretation of the First Amendment (3)
COMM 4410 Professional Internship (3)*
ENGL 2106 Film Criticism (4)
FORL 3160 European Cinema (3)
FREN 4050 Topics in French Film (3)
GERM 3160 Survey of German Films (3)
HIST 3010 American History & Culture through Film (3)
JOUR 2160 Introduction to Journalism (3)
JOUR 3160 News Writing (3)
JOUR 3161 News Editing (3)
POLS 3104 Mass Media and Government (3)
POLS 3107 Political Influence of the Media (3)
RELS 3212 Film and Identity (3)
SOCY 2112 Popular Culture (3)
SPAN 4050 Topics in Film of Peninsular Spain (3)
SPAN 4050 Topics in Latin American Film (3)

** with approval of advisor*

Organizational Communication (12 hours)

The Organizational Communication concentration is designed for students whose careers will benefit from an understanding of the communication processes that occur within organizational contexts. Students explore both the theory and practice of organizational communication.

All students choosing this concentration complete the following courses:

COMM 3141 Organizational Communication (3)
COMM 3142 Applications in Org. Comm (3)
COMM 4141 Advanced Org. Communication (3)

Students select three hours from the following:

AFRS 2201 Introduction to Human Relations (3)
ANTH 4120 Intercultural Communication (3)
COMM 2105 Small Group Communication (3)
COMM 2107 Interpersonal Communication (3)
COMM 3054 Topics in Organizational Comm (3)
COMM 3880 Independent Study (1-3)*
COMM 4410 Professional Internship (3)*
ENGL 2116 Technical Communication (3)
MGMT 3160 Business Communication (3)
PHIL 2175 Professional Ethics (3)
PSYC 2171 Intro to Industrial/Org Psych (3)
PSYC 3114 Motivation (3)
SOCY 4112 Sociology of Work (3)
SOCY 4115 Sociology of Corporations (3)

** with approval of advisor*

Communication and Public Advocacy (12 hours)
The Communication and Public Advocacy concentration is designed for those students desiring a well-developed background in the use, theory, construction, and analysis of public messages. The course of study provides training in individual public communication skills and provides a foundation for the analysis and evaluation of advocacy discourse.

All students choosing this concentration complete the following courses:

COMM 2102 Advanced Public Speaking (3)
COMM 2103 Argumentation & Debate (3)
COMM 3130 Communication & Public Advocacy (3)

Students select three hours from the following:

COMM 3051 Topics in Health Communication (3)
COMM 3052 Topics in Mass Media (3)
COMM 3054 Topics in Organizational Comm (3)
COMM 3055 Topics in Public Relations (3)
COMM 3131 African-American Oratory (3)
COMM 3403 Debate Practicum (2)**
COMM 3880 Independent Study (1-3)*
COMM 4410 Communication Internship (3)*
ENGL 4165 Language and Culture (3)
POLS 3104 Mass Media and Politics (3)
POLS 3110 North Carolina Student Legislature (3)
POLS 3163 Model United Nations (3)

** with approval of advisor*
***may be repeated but no more than 3 hours will apply to meeting this elective requirement*

Public Relations (21 hours)
The Public Relations concentration is designed to provide students with a general background in public relations. Students examine both the theory and practice of public relations.

Students choosing this concentration complete the following courses:

JOUR 2160 Introduction to Journalism (3)
COMM 2145 Principles of Public Relations (3)
COMM 3245 Public Relations Writing (3)
COMM 3246 Public Relations Strategy (3)
COMM 4145 Communication Campaigns (3)
COMM 4410 Professional Internship (3)

Students select six hours from the following:

ANTH 4120 Intercultural Communication (3)
COMM 2102 Advanced Public Speaking (3)
COMM 3055 Topics in Public Relations (3)
COMM 3141 Organizational Communication (3)
COMM 3880 Independent Study (3)*
COMM 4101 Media and the Law (3)
COMM 4141 Advanced Organization Communication (3)
COMM 4147 International Public Relations (3)
COMM 4410 Professional Internship (3)*
ENGL 2116 Technical Communication (3)
JOUR 3160 News Writing (3)
JOUR 3161 News Editing (3)
JOUR 3162 Feature Writing (3)

** with approval of advisor*

Related Course Work (6-18 hours)
All students in the Mass Media, Organizational Communication, and Public Advocacy tracks must complete 18 hours of related course work excluding any courses applied to Core Requirements or Track requirements. Students in the Health Communication track must complete nine hours of related course work excluding any courses applied to Core Requirements or requirements within that track. All related course work must be approved by the student's advisor. An approved second major or a minor may be used to satisfy this requirement.

CERTIFICATE IN INTERNATIONAL PUBLIC RELATIONS

Students electing the certificate in International Public Relations must be enrolled as majors in the Public Relations track. In addition to completing the standard core and required track courses, students must complete the following elective track work, related course work, and language requirements:

Elective Track Work (6 credit hours). Students must complete COMM 4147, International Public Relations and *either* COMM 4410, Professional Internship (with international focus) or ANTH 4120, Intercultural Communication.

Related Course Work (9 credit hours). Students may either complete a semester of study abroad earning at least 9 credit hours at a non-American university OR complete an additional 9 credit hours of related course work selected from the following courses. At least 3

credit hours must be taken at the 3000 level or above.

ANTH 2010 Topics in Ethnography
ANTH 2111 Peoples of Africa
ANTH 2115 Culture and Society in the Middle East
ANTH 2116 Contemporary Latin America
ANTH 3111 Applied Anthropology
ANTH 4120 Intercultural Communications*
HIST 2200 Asian Civilization
HIST 2201 History of Modern Asia / INTL 2201 Introduction to Asian Studies
HIST 2207 Modern Latin America / INTL 2401 Introduction to Latin American Studies
HIST 2211 Modern Africa / INTL 2101 Introduction to African Studies
HIST 3116 Twentieth Century Europe / INTL 2301 Introduction to European Studies
INTL 1101 Introduction to International Studies
INTL 3000 Topics in International Studies
POLS 1130 Comparative Politics
POLS 1150 International Politics
POLS 3141 European Politics
POLS 3143 African Politics
POLS 3144 Latin American Politics
POLS 3148 Chinese Politics
POLS 3149 Japanese Politics
POLS 3164 U.S.-Latin American Relations
POLS 3165 East Asia in World Affairs
POLS 3167 U.S. and Japan
POLS 3169 Foreign Policy of African States
SPAN 3029 Cultural Dimensions of Doing Business with Spanish-Speaking Countries

**ANTH 4120 cannot be counted as both an Elective Track course and a Related Course*

Foreign Language. In addition to department and university foreign language requirements, students must complete one additional 2000 level foreign language course beyond the departmental foreign language requirement. The following courses would meet this requirement:

French 2202 or 2210
German 2202 or 2210
Spanish 2202, 2205, or 2210
Italian 2202
Portuguese 2202
Japanese 2201
Russian 2201

International, non-native English speakers must score a minimum of 550 on the TOEFL, a minimum of 85 on the MELAB.

CERTIFICATE IN LEADERSHIP STUDIES

Students electing the certificate in Leadership Studies may be enrolled in any undergraduate major. In addition to completing the standard core and required track courses for their majors, students must complete 18 hours of course work as listed:

Required Courses (9 credit hours)
COMM 3135 Leadership Theory & Group Dynamics (3)
COMM 3136 Leadership, Service and Ethics (3)
COMM 4410 Professional Internship (3)

Ethics (3 credit hours)
One course from the following:
PHIL 2175 Professional Ethics (3)
PHIL 3219 History of Ethical Theories (3)
PHIL 3221 Ethics (3)
PHIL 3231 Business Ethics 3231 (3)
POLS 3175 Philosophy of Law (3)

Elective courses (6 credit hours)
AERO 3101 Leadership and Management (3)
AERO 3102 Defense Admin & Military Mgmt (3)
COMM 2105 Small Group Communication (3)
COMM 2107 Interpersonal Communication (3)
EXER 1231 Introduction to Outdoor Adventure (1)
EXER 1235 Challenge Course Activities (1)
EXER 2232 Wilderness Trip Leading (1)
EXER 2234 Challenge Course Facilitation (1)
MGMT 3140 Mgmt & Organizational Behavior (3)
MGMT 3287 Managerial Leadership (3)
PSYC 2171 Introduction to Ind/Org Psychology (3)
POLS 3112 The Presidency (3)
POLS 4110 North Carolina Student Legislature (3)

MINOR IN COMMUNICATION STUDIES

The minor in Communication Studies consists of 18 semester hours of COMM classes, including COMM 1101 (Public Speaking) and COMM 2100 (Communication Theory), and at least 6 credit hours taken at the 3000 level and above. Students must attain an overall GPA of 2.0 in all coursework within the minor.

Students matriculated at UNC Charlotte and planning to declare Communication Studies as their minor must have an overall GPA of at least 2.0.

MINOR IN JOURNALISM

The minor in Journalism provides an introduction to journalism areas such as writing, editing, feature writing, layout and design, and related communication and media issues. It is designed for students who have completed ENGL 1101 and 1102. The minor consists of 18 hours of coursework including:

JOUR 2160 Introduction to Journalism
JOUR 3160 Advanced News Reporting and Writing
JOUR 3162 Feature Writing

The nine (9) hours of elective coursework needed to complete the minor may be chosen from:

ENGL 4008 Writing for Publication (3)
ENGL 4204 Expository Writing (3)
JOUR 3050 Topics in Journalism (3)

JOUR 3161 Newsediting (3)
JOUR 3163 Visual Communication in the Media (3)
JOUR 3401 Journalism Practicum (2)
ARTG 2181 Graphic Design I (3)
ARTG 3183 Graphic Design II (3)
ARTT 2191 Photographic Media I (3)
COMM 3120 Communication and the Mass Media
COMM 3050 Topics in Communication Studies (3)*
COMM 3880 Independent Study (1-3)*
COMM 4101 Media and the Law (3)
COMM 4102 Federal Interpretation of the First Amendment (3)
COMM 4410 Professional Internship (3)*
POLS 3103 Public Opinion
POLS 3104 Mass Media

**with approval of advisor*

Note: *Students may count JOUR 3160, 3161, and 3162 toward the major in English* ***or*** *toward the minor in Journalism; students may not count the same courses toward both.*

With their advisor's approval, students in the Communication Studies major may count as related course work any course used to fulfill requirements for the Journalism minor as long as that course is not simultaneously being used to fulfill either *CORE* or *TRACK* requirements of the major.

Department of
Criminal Justice

www.criminaljustice.uncc.edu

Chair and Professor: *V. Lord*
Professors Emeritus: *C. Dean, J.D. Hirschel*
Professors: *B. Arrigo, Brame, P. Friday*
Associate Professors: *B. Bjerregaard, A. Blowers, C. Coston, M. Turner*
Assistant Professors: *K. Blevins, L. Exum, J. Hartman, T. Holt, J. Kuhns*
Lecturers: *J. Marinello, K. Nicolaides*

The undergraduate program in criminal justice addresses issues confronting the entire criminal justice system, from the nature of crime and delinquency, to society's varied responses to it. A major in criminal justice provides a broad educational background emphasizing social science and basic knowledge regarding crime and social control. Students at UNC Charlotte learn about crime as a social problem, develop a critical understanding of the criminal justice system, address problems faced by the victim, and study the principles involved in achieving planned change.

Undergraduate students pursuing the academic study of the criminal justice system, a career in the criminal justice field, or preparation for graduate study may select the criminal justice curriculum leading to a Bachelor of Arts degree. Transfer students must complete 37 hours of criminal justice course work unless they have completed the equivalent of STATS 1222, FORL 2201, CJUS 1100, CJUS 2000, CJUS 2102, CJUS 2120, or CJUS 2154 at another institution. In this case, credit will be awarded. The Department also offers a minor. Students may enroll in the B.A. program on either a full-time or part-time basis. Evening classes are scheduled to accommodate part-time students.

Transfer students who have an A.A.S. degree in a Criminal Justice related discipline will receive general education exemption and may be awarded up to 15 semester hours of credit for criminal justice coursework completed with a grade of C or better. However, students are required to complete an additional 15 semester hours of upper level criminal justice coursework after an evaluation of the transcript.

Current UNC Charlotte students interested in declaring a major in Criminal Justice should submit a Declaration of Program and unofficial transcript by October 1 for Fall, March 1 for Spring, and May 1 for Summer. Completion of CJUS 1100 and STATS 1222 with a C or better is required prior to declaration. Criminal Justice majors are required to declare an approved minor or second major.

The Department also offers a Master of Science degree program in Criminal Justice. Please see the *UNC Charlotte Graduate Catalog* for details.

BACHELOR OF ARTS

A major in Criminal Justice requires STAT 1222 and 31 semester hours of criminal justice courses, including CJUS 1100 (Introduction to Criminal Justice), CJUS 3100 (Criminal Justice Theory), CJUS 3101 (Research Methods in Criminal Justice), and *one* course from *each* of the following areas:

Law Enforcement Area
CJUS 2000 Introduction to Law Enforcement
CJUS 3141 Law Enforcement Behavioral Systems
CJUS 3200 Security & Loss Prevention

Corrections Area
CJUS 2154 Introduction to Corrections
CJUS 3150 Community Corrections
CJUS 3151 Institutional Corrections
CJUS 3153 Juvenile Corrections

Legal Area
CJUS 3102 American Criminal Courts

CJUS 3110 Criminal Justice and the Law
CJUS 3111 Criminal Procedure
CJUS 3121 Juvenile Law
CJUS 3152 Correctional Law

A minimum of a *C* average in all criminal justice coursework and at least a *C* in CJUS 1100, 3100 and 3101 are required.

Criminal Justice majors must also satisfy the foreign language requirement by completing the 2201 level course (or course with emphasis on conversation) in a modern language other than English that uses the Latin alphabet (e.g., French, German, Italian, Portuguese, Spanish) OR the 1202 course (or the equivalent) in a modern language that does not use the Latin alphabet (e.g., Arabic, Chinese, Greek, Japanese, Russian). Approved American Sign Language courses may be substituted with permission of the Department.

While not required, students are encouraged to participate in internship programs available through the Department. Internships provide opportunities to combine theory and practice in a realistic setting, and to make more judicious career decisions. Consult the Department of Criminal Justice's Academic Advisor for a suggested schedule to complete the B.A. degree with a major in Criminal Justice.

SUGGESTED CURRICULUM FOR CRIMINAL JUSTICE MAJORS

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
CJUS 1100	3	COMM 1101	3
ENGL 1101	3	ENGL 1102	3
LBST 1000-series	3	Science (with Lab)	4
MATH 1100	3	SOCY 1101	3
		STAT 1222	3

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
CJUS 2000	3	CJUS 2102	3
CJUS 2120	3	CJUS 2154	4
FORL 1201	4	FORL 1202	3
LBST 2101	3	LBST 2102	3
PSYC 1101 (with/without lab)	3/4	LBST 2210-series	3

General Education Goals complete*

Junior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
CJUS 3100	3	CJUS 3101 (W)	4
CJUS 3102	3	CJUS Elective	3
FORL 2201 (or other conversation course)	3	Elective	3
2nd Major/Minor Requirements (2)	6	2nd Major/Minor Requirements (2)	6

Senior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
CJ Internship	6	2nd Major/Minor Requirements (2)	6
CJUS Electives (2)	6	2nd Major Requirements/ Electives (4)	12
2nd Major/Minor Requirements (2)	6	***B.A. requirements complete***	
Criminal Justice requirements complete			

MINOR IN CRIMINAL JUSTICE

A minor in Criminal Justice is available to all undergraduates except Criminal Justice majors and requires 18 approved semester hours including: CJUS 1100 and 3100, and 12 semester hours of upper-division criminal justice electives (3000 and 4000 level courses). A grade point average of at least 2.0 is required, including at least a grade of *C* in CJUS 1100 and 3100.

Department of Dance and Theatre

www.dancetheatre.uncc.edu

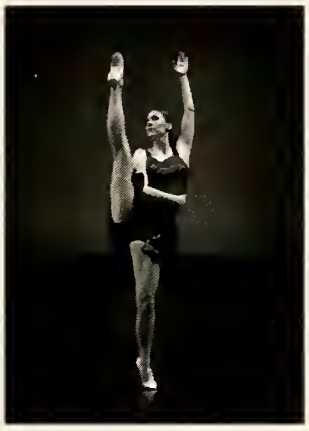
Chair and Professor: *B. Auerbach*
Professors: *S. Huskey, M. Pizzato, P. Sofras*
Associate Professors: *R. Croghan, A. Hartley, K. Hubbard, D. Neil, J. Vesce, M. Webster*
Assistant Professors: *E.E. Balcos, D. Black, D. Fillmore*
Lecturers: *L. Bumgarner, W. Crockett, M. Howieson, G. Larsen, K. Mizell-Ryan, J. Shannon*

The Department awards the Bachelor of Arts degree in Dance, Theatre, Dance Education, and Theatre Education. Minors are available in both Dance and Theatre, and North Carolina K-12 teacher licensure can also be earned in both disciplines. In conjunction with the College of Education, the Department also offers a

Master of Arts in Teaching Dance and a Master of Arts in Teaching Theatre.

MISSION STATEMENT

The primary goals of the Department of Dance and Theatre are providing an exemplary liberal arts education and inspiring intellectual inquiry while nurturing creativity. Students explore the theoretical foundations and aesthetics of both Dance and Theatre through cross-disciplinary as well as discipline-specific courses. While developing a broad base in dance and theatre, students gain skills and training to achieve career goals, commit to life-long learning, and enrich their quality of life. Through course-related performance and technical assignments within the Department's varied production season, students gain practical experience to develop as scholars and artists.



Our educational model is to discuss and explore in the classroom, then experiment in laboratory and rehearsal environments and, finally, to present our findings in the public forums of teaching and performance.

Faculty members are committed to the teaching and practice of dance and theatre, as they foster academic progress and artistic expression in an environment that respects cultural and artistic diversity. In addition, they contribute to the University, the community and their professions through scholarly and creative endeavors and through service activities.

The curricula include courses in acting, directing, dance technique and style (modern dance, ballet, jazz), choreography, and design (costume, scenic, lighting, sound). Courses in history, play analysis, and dance criticism provide the theoretical foundation of the liberal arts degree. Specialized pedagogy classes and laboratory experiences are included in the dance and theatre education degree programs which lead to K-12 teacher licensure in North Carolina reciprocal to South Carolina.

Students complete their majors by taking the specific dance, dance education, theatre, or theatre education discipline core and selected elective courses. The electives can be focused in the student's area of interest--performance, design, directing, choreography, theory, administration/management or pedagogy.

Dance and Theatre students are expected to attend all scheduled Dance and Theatre Department classes. Specific attendance policy will be listed on each course.

The Department presents a season of fully-staged plays and dance concerts as well as informal productions, student directed and choreographed works, musical theatre works, and original collaborative works. Auditions are open to all members of the University community. Productions and classes are held in Robinson Hall which contains three performance spaces and specialized rehearsal, design, and construction laboratories, as well as additional classrooms and Department offices.

A major in Dance, Dance Education, Theatre, or Theatre Education provides a liberal arts education. The skills and attributes developed in dance or theatre are essential to a professional arts career and they are applicable to all life endeavors. Motivation, concentration, self-confidence, creativity, flexibility, problem-solving, communication skills, and teamwork are enhanced through the study of dance and theatre.

Graduates may move directly into the profession as performers, directors/choreographers, designers or teachers. More commonly, they seek advanced training in graduate programs or apprenticeships with professional organizations.

BACHELOR OF ARTS IN DANCE

A major in Dance leading to the B.A. degree consists of 40 semester hours including:

- *7 hours in the departmental core:*
  DATH 2250 Lighting Design
  DATH 2401 Production Practicum
  DANC 2402 Performance Practicum

- *30 hours in the dance core:*
  DANC 1210, 2210, 3210 Ballet for Majors
  DANC 1211, 2211, 3211 Modern for Majors
  DANC 1280 Improvisation
  DANC 2216 Choreography
  DANC 2119 Anatomy for Dancers
  DANC 2226 Vintage Jazz Dance
  DANC 3221 Dance History I
  DANC 3222 Dance History II

- *5 hours of electives*

Note: All of these courses must be completed with no more than one grade of D and a GPA of at least 2.5.

MINOR IN DANCE

A minor in Dance requires 22 semester hours including:

- DANC 1212 Ballet I (2)
- DANC 1214 Modern Dance I (2)
- DANC 2401 Performance Practicum (1) **OR** DATH 2401Production Practicum (1)
- DANC 2401 (1) Performance Practicum **OR** DATH 2401 (1) Production Practicum
- *(This choice is repeated for total of 2 credit hours)*
- DANC Theory course (3)
  Select from:
  LBST 1101 The Arts and Society: Dance
  DANC 4110 Writing for Dance
  DANC 2228 Music for Dancers
  DANC 2119 Anatomy for Dancers
- DANC History course (3)
  DANC 3101 Dance History I **OR**
  DANC 3102 Dance History II
- DANC 2226 Vintage Jazz Dance (2)
- DANC 4001 Topics in Dance: Dancing for choreographers (1)
- DANC electives (7)

BACHELOR OF ARTS IN THEATRE

A major in Theatre leading to the B.A. degree consists of 40 semester hours including:

- *32 hours in the departmental core:*

THEA 1210 Acting I (O)
THEA 2140 Play Analysis
DATH 2401 Production Practicum (two of these)
THEA 2402 Performance Practicum: Theatre
THEA 3221 Directing I
THEA 3130 Ancient and Medieval Theatre **OR**
THEA 3131 Renaissance Theatre
THEA 3132 17th to Early 20th Century Theatre
OR THEA 3133 Contemporary Theatre
THEA 4140 Performance Theory (W)
THEA 4600 Senior Seminar

Choice of:
DATH 2210 Costume Design I **OR**
DATH 2230 Scenic Design I **OR**
DATH 2250 Lighting Design I

Choice of:
DATH 2220 & 2220L Costume Techniques **OR**
DATH 2240 & 2240L Stagecraft **OR**
DATH 2260 & 2260L Lighting Technology

Choice of:
DATH 2670 Stage Management **OR**
DATH 3265 Intro to Computer Aided Drafting 2D
OR
One or more of the above listed DATH courses

- *8 hours of electives*

Note: These courses must be completed with no more than one grade of D and a GPA of at least 2.5.

MINOR IN THEATRE

A minor in Theatre requires 22 semester hours including:

- THEA 1210 Acting I (O)
- DATH 2401 Production Practicum
- THEA 2140 Play Analysis
- Choice of: DATH 2210 Costume Design I **OR** DATH 2230 Scenic Design I **OR** DATH 2250 Lighting Design I
- Choice of: DATH 2401 Production Practicum **OR** THEA 2402 Performance Practicum: Theatre
- Choice of: THEA 3130, THEA 3131, THEA 3132, **OR** THEA 3133
- THEA XXXX or DATH XXXX (8 hours of theatre electives)

DANCE EDUCATION (K-12)

The major in Dance Education leads to (K-12) teacher licensure. In addition to completing the coursework for the major in Dance, Dance Education students take DANC 3230 Choreography as one of their dance electives and complete professional education requirements:

- DANC 4227/5227 Dance Education Methods I
- DANC 4227L/5227L Elementary Clinical Experience
- DANC 4257/ 5227 Dance Education Methods
- DANC 4257L/ 5227L Secondary Clinical Experience
- DANC 3467 Student Teaching/Seminar: K-12 Fine and Performing Arts
- EDUC 2100 Introduction to Education and Diversity in Schools **OR** MDSK 3160 Learning and Development: Birth through Adolescence
- SPED 2100 Introduction to Students with Special Needs
- SPED 3290 Modifying Instructions for Learners with Diverse Needs
- READ 3255 Integrating Reading and Writing Across Content Areas
- EIST 4100 Computer Applications in Education

Students seeking dance licensure should plan to declare the dance education major by the end of the sophomore year. A later decision to seek licensure may result in a delayed graduation date. A GPA of 2.75 is required for admission to student teaching. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.

THEATRE EDUCATION: (K-12)

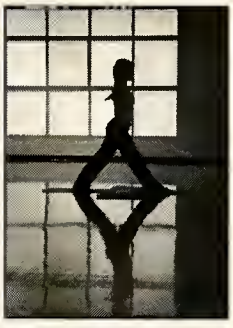
The major in Theatre Education leads to (K-12) teacher licensure. In addition to completing the coursework for the major in Theatre, Theatre Education majors take THEA 3222 Directing II and THEA 2640 Playwriting/ Screenwriting as theatre electives and complete professional education requirements:

- DATH 2260 & 2260L Lighting Technology (3)
- DATH 2640 Stage Management (3)

- THEA 1160 Creative Drama for the Classroom Teacher
- THEA 1860 Preliminary Experience in Student Teaching
- THEA 2460 Practicum in Creative Drama: K-8
- THEA 4460 Practicum in Secondary School Play Production: 9-12
- THEA 4467 Student Teaching/Seminar: K-12 Fine and Performing Arts: Theatre
- THEA 4165/5165 Methods of Facilitating Learning in Theatre Arts (W)
- THEA 4160 Theatre for Youth (3)
- COMM 3135 Leadership, Comm, & Group Dynamics
- EDUC 2100 Intro to Education & Diversity in Schools **OR** MDSK 3160 Learning & Dev: Birth through Adolescence
- EIST 4100 Computer Applications in Education
- SPED 2100 Intro to Students with Special Needs

Students seeking theatre licensure should plan to declare the theatre education major by the end of the sophomore year. A later decision to seek licensure may result in a delayed graduation date. A GPA of 2.75 is required for admission to student teaching. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.

PROFESSIONAL TRAINING CERTIFICATE IN DANCE



In conjunction with Charlotte's professional dance company, North Carolina Dance Theatre (NCDT), the University offers a Professional Training Certificate in Dance for those specializing in ballet performance. The partnership provides the student an association with a professional dance company while earning a college degree. The sixteen credit hours earned in the Certificate are included in the requirements for the baccalaureate degree. Pre-college credit is also available to high school students.

Open by audition to a student in any major, the two-year Professional Training Certificate in Dance provides training with expert teachers at DancePlace, the official school of North Carolina Dance Theatre. Rehearsal and performance opportunities with the company; the second company, NCDT 2; or the DancePlace performing group, Student Ensemble; put students in contact with internationally acclaimed choreographers. North Carolina Dance Theatre is an exceptional company whose Artistic Director, Jean-Pierre Bonnefoux and his Associate Directors, Patricia McBride and Jerri Kumery, include both classical and contemporary works in the repertory.

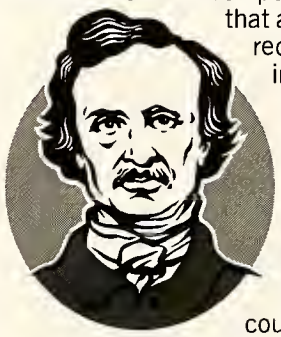
Department of English

www.english.uncc.edu

Chairperson: *C. Knoblauch*
Bonnie E. Cone Distinguished Professor in Teaching: *B. Davis*
Emeritus Professors: *G. Burne, A. Carver, J. Jacoby, J. Mason, F. Smith, L. Varnas*
Professors: *L. Brannon, S. Govan, R. Lunsford, J. McGavran, A. Moss, D. Shealy, M. West*
Emeritus Associate Professors: *D. Amante, L. Gatlin, R. Grey, M. Harper, J. McNair, M. Shapiro, S. Watson*
Associate Professors: *D. Bosley, P. Connolly, C. Davis, S. Gardner, T. Jackson, J. Leak, M. Morgan, M. Pereira, A. Rauch, B. Rudes, R. Thiede, G. Wickliff*
Assistant Professors: *P. Blitvich, P. Eckard, E. Gargano, A. Gwyn, K. Melnikoff, E. Miller, J. Munroe, A. Parkison, A. Scott, J. Staunton, A. Toscano, L. Vetter*
Lecturers: *R. Arnold, S. Bauerle, P. Blair, A. Brown, B. Cochran, S. Diehl, L. Eapen, L. Grey, L. Hofmann, Hull, G. Hutchinson, S. Lazenby, M.E. Muesing, J. Pooler-Courtney, B. Presnell, L. Raymond, C. Rothwell, M. Settle, J. Townsend, H. Tyree*

BACHELOR OF ARTS

A major in English leading to the B.A. degree consists of 33 semester hours of coursework beyond the six hours in composition (usually 1101 and 1102) that are part of the General Education requirements. Required courses include ENGL 2100 and 3100, which are prerequisites for any other 3000 or 4000 level literature courses; ENGL 3300, ENGL 3301, and ENGL 3302 (American and British Literature surveys); one course in language/linguistics (above 2000 level); and five elective courses in English, two of which may be at the 2000 level and two of which must be at the 4000 level. A GPA of 2.0 or better in all English courses is required for graduation.



The English major also requires completion of COMM 1101; competency in a foreign language at the intermediate level, certified either through placement exam or coursework (2000 level); and a minor established at UNC Charlotte or an individually designed minor consisting of a minimum of 18 semester hours in coursework selected from other departments designed to supplement and strengthen the goals of the major, approved by the student's advisor and the department. Students with a second

major in another department will be considered automatically to have satisfied the minor requirement, as will students who complete teacher licensure requirements.

Internships. Internships in the community and at the University are available for upper-level English majors. Contact the Department of English for further information.

Department of English Class Attendance Policy. Students are expected to attend all scheduled Department of English classes. Specific attendance policy for each section is left to the teacher.

Awards. The Department gives awards each spring (usually to senior English majors): the Margaret Bryan Award for excellence in scholarship; the Intimate Bookshop Creative Writing Awards; the Aristidis Katopodis Award for excellence in the study of English; the Julian Mason Award for excellence in the study of Southern literature; the Glenn Burne award for excellence in Children's Literature Scholarship; and the Robert M. Wallace Award for excellence in the study of English. Each spring, it also awards the Goudes Scholarship and the Joan Neal Scholarship to rising senior English majors, for academic excellence and financial need.

The **Writing Resources Center** and **The Writing Project** are available to students who want to become more effective writers, as well as to those studying to be K-12 writing teachers, respectively. For more information, please see the *Student Services and Programs* section of this *Catalog.*

MINOR IN ENGLISH

Students who do not major in English but plan to take courses in English, for pleasure or in order to build their skills with language, should consult the Department about the possibility of a minor in English, Technical/Professional Writing, or African-American Literature.

A minor in English consists of 18 hours in English at the 2000 level or above. Students must take ENGL 2100 and 3100 and at least six additional hours in courses at the 3000 level or above to complete the minor. A GPA of 2.0 or better in all English courses taken is required for graduation.

MINOR IN AFRICAN-AMERICAN LITERATURE

A minor in African-American Literature consists of 18 hours as follows:

Required courses - 9 hours
(Note: these courses must be taken before the elective courses)
ENGL 2100 Writing About Literature
ENGL 2301/AFRS 2301 Introduction to African-American Literature
AFRS 1111 The African-American Experience Through Reconstruction

Elective courses – 9 hours
ENGL 4147 Early Black American Literature
ENGL 4148 Twentieth-Century Black American Literature: Prose
ENGL 4155 Pan-African Literature
ENGL 4156/AFRS 4106 Gender and African-American Literature
ENGL 4157/AFRS 4107 African-American Poetry
ENGL 4158/AFRS 4108 African-American Literary Theory and Criticism
AFRS 2106 Literary Analysis of Black Protest of the 60's
ENGL 3050, 4050, 4090 Special Topics courses (only when concerning African-American literary figures or topics)

Note: ENGL 1101 and 1102 (or 1103) are prerequisites for all courses in the minor except AFRS 1111 and AFRS 2106.

MINOR IN TECHNICAL/PROFESSIONAL WRITING

A minor in Technical/Professional Writing consists of 21 hours; required courses are English 4180 and ENGL 4410. Also required are two courses above the 1000-level in a technical or scientific discipline that cannot also count towards General Education requirements. The remaining courses can be selected from ENGL 4008, 4181, 4182, and 4183. Students may request permission to take other appropriate courses from the Coordinator of the Technical/Professional Writing Program. ENGL 1101/1102 (1103) and 2116 are prerequisites for courses in the minor. Students should declare the minor before trying to enroll in ENGL 2116 to assure a place in the course.

Note: The Department of English allows English majors who minor in African-American Literature or Technical Writing to count only two courses from the minor toward fulfillment of the major degree requirements.

TEACHER LICENSURE IN ENGLISH

Students seeking licensure to teach English in grades 9-12 should consult with their advisors in the Department of Middle, Secondary, and K-12 Education regarding education courses that are required for licensure. Such students must fulfill all the requirements of the English major **and** the following additional requirements and expectations: at least 39 hours in English above the 1000 level with a GPA of at least 2.75 for those

courses taken at UNC Charlotte; a GPA of at least 2.75 for all courses taken at UNC Charlotte; and submission of an acceptable writing portfolio to, and successful interview with, the Department of English's Teacher Education Committee. Required courses are: ENGL 2100 (and/or additional approved coursework in writing), 3100; ENGL 3132 and one additional course focusing on language or literacy above the 2000 level; (e.g. ENGL 4161, or ENGL 4166); ENGL 3104; one 3000 level survey course in British literature, one in American literature, and one in either British or American literature; ENGL 4254; a course in World Literature at the 2000 level or above; ENGL 4116 or 4117 (or an approved 4000 level course in Shakespeare); one course in minority literature(s) (ENGL 2301, 3156, 4104, 4146, 4147, 4148, 4156, 4157, 4158, or an approved special topic course in multicultural literature(s) such as ENGL 3050) and one elective at the 4000 level. Also required, and not counted toward the 39 hours of English coursework, are COMM 1101 and competency in a foreign language at the intermediate level. Students who complete the requirements for teaching licensure are ***not*** required to complete an approved minor. Students should consult early with their departmental advisors in English and Education regarding these requirements and expectations. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.

Film Studies

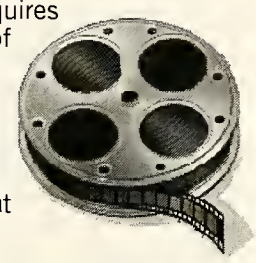
www.filmstudies.uncc.edu

Director: *Robert C. Reimer, Professor of German*

The interdisciplinary minor in Film Studies is designed to allow students to develop knowledge of film and video as an art form while fulfilling the requirements for one of the approved degree programs at the University. The College of Arts and Sciences courses that satisfy the minor represent different aspects of film and video art: (1) Culture, (2) History, (3) Theory, and (4) Production.

MINOR IN FILM STUDIES

The minor in Film Studies requires the completion of 18 hours of approved courses as follows: (1) FILM 2201 Introduction to Film Studies and (2) at least five additional courses representing at least three of the departments offering the minor. Courses that satisfy the minor are as follows:



AFRS 2105 Black Images in the Media
ARTM 3105 Video Art
ARTT 3891 Time Arts Workshop
COMM 3050 Topics in Communication Studies: Film
ENGL 2106 Film Criticism
ENGL 3050 Topics in English: Film
FORL 3160 European Cinema
FREN 3160 Topics in French: Film
GERM 3160 Survey of German Film
HIST 3310 History and Culture through Film
RELS 3212 Film and Identity
THEA 2640 Playwriting/Screenwriting
THEA 4001 Topics (Fundamentals of Film Production and other topics)

In addition, topics courses offered by American Studies and departments not presently associated with the minor in Film Studies may be applied to the minor upon approval of the Director.

Students may elect as one of their courses an internship that focuses on a video or film project in any of the participating departments. Students who choose this option will sign up under the internship course number of the department that seems most appropriate. If no department designation is available, students will sign up for ARSC 3400, the internship course in the College of Arts and Sciences.

Department of

Geography and Earth Sciences

www.geoearth.uncc.edu

Chairperson and Professor: *G. Ingalls*
Emeritus Faculty: *D. Hartgen, D. Lord, N. Nunnally, N. Schul, J. Sommer, A. Stuart*
Knight Distinguished Professor: *J. Thill*
Professors: *J. Bender, J. Diemer, O. Furuseth, E. Hauser, T. Moore, W. Xiang*
Associate Professors: *C. Allan, A. Bobyarchick, H. Campbell, S. Ives, W. Martin, R. Meentemeyer, H. Smith*
Assistant Professors: *J. Chadwick, K. Chilton, M. Eastin, M. Eppes, B. Etherton, B. Graves, S. Hippensteel, J. Lee, Q. Wang*
Lecturers: *J. Armour, B. Garcia, L. Garo, P. Smith, T. Shirley, J. Strickland*
Adjunct Faculty: *I. Heard, E. Klingel, B. Strickland*
Executive in Residence: *J.D. Rash*
Senior Associate Provost: *W. Walcott*

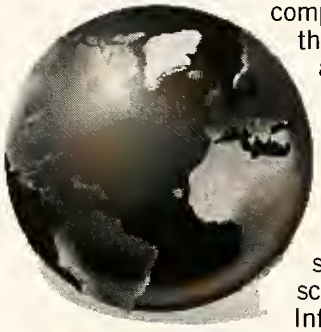
The Department of Geography and Earth Sciences is a cross-disciplinary unit offering different but related programs of study. Geography emphasizes the locational aspects of human activities as they are distributed over the Earth. Earth Sciences includes the study of the hydrosphere, atmosphere, and surficial materials of the Earth. Geology examines the

composition, history, and structure of the whole earth. Meteorology provides a more rigorous study of the fundamental atmospheric processes that lead to weather and climate. A unique advantage of the Department's interdisciplinary curriculum is that all four programs of study are inter-relate d in many ways. For example, a geography student interested in land use planning might gain important experience and knowledge from coursework in soil science or hydrology. An Earth Sciences major might better understand soil formation and chemical weathering with classes in petrology and optical mineralogy. Emphasis in one area should not preclude class work or interest in another, and in fact, this type of interdisciplinary work will often be critical to the student's program of study.

Geography. The Geography curriculum is oriented toward the methodologies of social science in which the importance of location is stressed. Traditional regional studies and conceptual courses that deal with land use patterns, transportation systems, industrial location, the distribution of retail activities, city planning, and urban systems are augmented by technique-oriented courses such as map design and compilation, computer mapping, analysis of satellite images, statistical methods, and geographic information systems (GIS). These courses prepare students in both the concepts and methods of contemporary spatial analysis.

Geography majors find careers open to them in urban and regional planning, cartography, GIS, marketing research, transportation planning, real estate development and teaching. While a wide range of career options are available to undergraduate geography majors, graduate studies provide additional options. *(See the UNC Charlotte Graduate Catalog regarding the M.A. in Geography program.)*

Earth Sciences. The Earth Sciences program focuses on the suite of dynamic processes acting at or near the surface of the Earth. Study spotlights the composition and dynamics of the atmosphere, hydrosphere and/or surficial materials including environmental applications of these fields of study. Course work covers areas such as environmental geology, hydrology, remote sensing, surfaces processes, soil science, and Environmental Information Systems. This program also prepares students for graduate studies in hydrology and remote sensing.



Students majoring in Earth Sciences pursue careers in environmental consulting, environmental planning, meteorology, land development planning, site analysis, terrain analysis, and teaching. There are employment opportunities in both government and private industry with the greatest range of positions available to students who earn graduate degrees. *(See the UNC Charlotte Graduate Catalog regarding the M.S. in Earth Sciences program.)*

Geology. The Geology program examines the entire Earth as a dynamic natural system by focusing on its composition, history and structure. Students pursuing a B.S. degree take coursework in areas of Earth Sciences and Geology such as mineralogy, geochemistry, structural geology, hydrogeology, sedimentology, stratigraphy and petrology, and optical mineralogy.

Students majoring in Geology pursue careers in geotechnical engineering, environmental consulting, mining, oil and gas exploration, site analysis, and teaching. There are employment opportunities in both government and private industry with the greatest range of positions available to students who earn graduate degrees. *(See the UNC Charlotte Graduate Catalog regarding the M.S. in Earth Sciences program.)*

Meteorology. The Meteorology program focuses on the atmosphere. Students pursing the B.S. degree will take courses describing and explaining processes in the atmosphere, with traditional coursework in synoptic, dynamic, physical and boundary layer meteorology. Ancillary coursework in oceanography, applied climatology, and air quality modeling are also available. Students majoring in meteorology pursue employment in weather forecasting – private and public, air quality, climatology or atmospheric research. Students majoring in meteorology pursue employment in government with the National Weather Service or through service in the United States Air Force and careers in industry either through broadcasting or with consulting companies and public utilities.

Facilities. The Department of Geography and Earth Sciences is housed in modern, well-equipped facilities. Extensive rock, mineral and fossil holdings are available for instructional purposes. The optical mineralogy laboratory features high-quality petrographic microscopes linked with image analysis and cathodoluminescence systems. Analytical facilities also include a geochemical sample preparation laboratory, a plasma emission spectrometer, IC, TOC/TN, Microwave Digestion, XRD, XRF, ICP-MS analytical units, and rapid sediment analyzers. The petrology lab employs a precision thin section machine and an automated photomicrography unit that is attached to a research-grade polarizing microscope. A proton magnetometer and ground penetrating radar

systems are available for ground-based field surveys. Frequent field trips are facilitated by the Department's vans, extensive field instruments and camping gear.

The atmospheric-hydrology laboratories house the Department's Meteorology Data Acquisition System (McIDAS), a geographic information systems package that provides "real time" meteorological data via links to weather satellites. Stream gauges, ground water monitoring equipment, and soil analysis instruments are on hand for use in fluvial processes, hydrogeology, and soils labs.

Students have access to a Departmental computer lab equipped with networked Macintosh and PC workstations, a file server, and printer. These facilities are networked to other labs on campus and to the University's Novell servers. A separate geographic information system (GIS) and remote sensing lab houses PC and Unix workstations, digitizers, and a large format color inkjet plotter. ArcGIS, ArcView and Erdas software packages run on the workstations and are used to support classes in GIS, remote sensing and image processing, and spatial decision support systems. The Department also maintains a large collection of geographically-referenced data for use by students and staff in the lab. These data sets include satellite imagery, U.S. Census Bureau files, and U.S. Geological Survey map data, as well as locally-developed data sets.

The UNC Charlotte Cartography Laboratory has earned a national reputation for its high quality production cartography. This cutting edge facility contains high-end Macintosh workstations, one 1200 dpi scanner, a 35 mm slide scanner and a slide processing unit, high-resolution laser printers and a large format color printer. Software include Adobe Illustrator, Photoshop, PageMill, Authorware, Director, PowerPoint and Astound.

Cooperative Education in Geography and Earth Sciences. Students in the Geography and Earth Sciences programs may obtain practical work experience while pursuing their degrees by participating in the Cooperative Education program. The work experience is approved by the Department and is closely related to the student's field of study. Students interested in learning more about participating in this program should contact the Department of Geography and Earth Sciences or the University Career Center.

BACHELOR OF ARTS IN GEOGRAPHY

A major leading to a B.A. degree consists of 29 hours in geography and earth sciences and will include GEOG 1101, 1105, 2100, 2101, 2110 and ESCI 1101 with the lab. Except for required courses, all work offered for the major must be numbered 2100 or above. Students are encouraged to take additional coursework in related disciplines or to select a second major. Consult the Department of Geography and Earth Sciences for a suggested schedule to complete the B.A. degree with a major in Geography.

BACHELOR OF SCIENCE IN GEOGRAPHY

A major leading to a B.S. degree consists of 40 hours of geography and earth sciences and will include 17 hours of major requirements listed below. In addition, students must complete ENGL 2116 (Introduction to Technical Communication) as well as General Education English requirements, and one mathematics course above MATH 1103. Options are available within the major in Economic Geography, Community and Regional Planning, and GIS. Other concentrations can be developed. Students should contact their advisors about these and other possible concentrations. Except for required courses, all work offered for the major must be in courses numbered 2100 or above. Consult the Department of Geography and Earth Sciences for a suggested schedule to complete the B.S. degree with a major in Geography.

Major Requirements (17 hours)
GEOG 1101 World Regional Geography (3)
GEOG 1105 Location of Human Activity (3)
GEOG 2100 Maps and Graphs (3)
GEOG 2101 Maps and Graphs Laboratory (1)
GEOG 2110 Introduction to Geographic Research (3)
ESCI 1101 Earth Science-Geography (3)
ESCI 1101L Earth Science-Geography Lab (1)

Community & Regional Planning Option (select 5 courses)
GEOG 3200 Land Use Planning (3)
GEOG 3205 Internal Structure of the City (3)
GEOG 3210 Regional Planning (3)
GEOG 3215 Environmental Planning (3)
GEOG 4120 Introduction to GIS (4)
GEOG 4210 Urban Planning Methods (3)

Economic Geography Option (select 5 courses)
GEOG 3000 Topics in Regional Geography (3)
GEOG 3105 Geography of Global Economy (3)
GEOG 3150 Manufacturing Geography (3)
GEOG 3205 Internal Structure of the City (3)
GEOG 3605 Geography of Europe (W) (3)
GEOG 4000 Selected Topics in Geography (3)
GEOG 4108 Sport, Place & Development (3)
GEOG 4155 Retail Location (3)
GEOG 4160 Geography of Transportation Systems (3)
GEOG 4240 Geography of Knowledge & Information (3)
GEOG 4255 Applied Population Analysis (3)

Option-related electives to complete B.S. degree may be selected from:
GEOG 3100 The City and Its Region (3)
GEOG 3115 Urban Transportation Problems (3)
GEOG 3205 Internal Structure of the City (3)
GEOG 3265 Behavioral Geography (3)
GEOG 4103 Computer Mapping (3)
GEOG 4130 Advanced GIS (4)
GEOG 4155 Retail Geography (3)
GEOG 4209 Small Town Planning (3)
GEOG 4255 Applied Population Analysis (3)
GEOG 4400 Internship in Geography (3-6)

Geographic Information Systems Option (select 5 courses)

GEOG 4101 Cartographic Techniques (3)
GEOG 4102 Cartographic Design & Map Construction (3)
GEOG 4103 Computer Mapping (3)*
GEOG 4120 Geographic Information Systems (5)
GEOG 4130 Advanced GIS (4)*
ESCI 4170 Fundamentals of Remote Sensing (4)
ESCI 4180 Digital Image Processing in Remote Sensing (4)

**Required*

Note: It is recommended that students supplement these courses with computer programming and database courses such as ITCS 1214 and ITCS 3160.

MINOR IN GEOGRAPHY

A minor in Geography consists of 19 hours, including GEOG 1101 and 1105 and ESCI 1101/1101L, and nine additional hours in geography. The minor can be tailored to support a number of majors, such as business, computer science, political science, and architecture.

MINOR IN URBAN STUDIES

For details on the minor in Urban Studies, please refer to the Urban Studies heading later in the College of Arts and Sciences section of this *Catalog.*

BACHELOR OF ARTS IN EARTH SCIENCES

A major in Earth Sciences leading to a B.A. degree consists of a minimum of 40 hours of required Earth Science (ESCI) and Geology (GEOL) courses and 10 hours of elective courses.

Required Courses (40 hours)
ESCI 1101 Earth Science-Geography (3)
ESCI 1101L Earth Science-Geography Lab (1)
GEOL 1200 Physical Geology (3)
GEOL 1200L Physical Geology Lab (1)
GEOL 1210 Earth History (3)
GEOL 1210L Earth History Lab (1)
ESCI 2101 The Environmental Dilemma (3)
ESCI 3105 Oceanography (3)
ESCI 4140 Hydrologic Processes (4)
ESCI 4210 Soil Science (4)
ESCI 4600 Earth Sciences Seminar (1)
GEOL 3115 Mineralogy (4)
GEOL 3190 Environmental Geology (3)
GEOL 4105 Geomorphology (3)
METR 3140 Intro to Meteorology & Climatology (3)

Elective Courses. Ten hours of elective coursework may be selected from additional ESCI and GEOL courses, GEOG 2120, 3200, 3215 or 4120, CHEM 1251, 1252, and associated labs, PHYS 1101, 1102 or PHYS 2101 and 2102 and associated labs, MATH 1241, 1242, and STAT 2122.

BACHELOR OF ARTS IN EARTH SCIENCES: SECONDARY TEACHING OPTION

Students preparing to teach high school earth science may become licensed by earning the B.A. degree including the Secondary Teaching Option. This program consists of a minimum of 37 hours in geography and earth science, including ESCI 1101, 1101L, 2101, 3105; GEOL 1200, 1200L, 1210, 1210L, 3115, 3190, 3190L; and GEOG 2100; 11 elective hours selected from earth science courses of which at least 4 hours are in courses numbered 3000 or above. Also required for this option are CHEM 1251, 1251L; PHYS 1101, 1101L; MATH 1241; SPED 2100, EDUC 2100, 4290; SECD 3140, 3141, 4441; READ 3255; MDSK 3150, 3151, 4251; PHYS 1130, 1130L; and one additional physical of life science elective. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.

BACHELOR OF SCIENCE IN EARTH SCIENCES

A major in Earth Sciences leading to a B.S. degree consists of a minimum of 30 hours of required Earth Science (ESCI) and Geology (GEOL) courses, 15 hours of elective courses and 21 hours of required extra departmental courses. Students considering a career as a licensed professional soil scientist should complete the Bachelor of Science degree with 15 hours of soil science course work as well as meet the work experience and examination requirements of the NC licensure board.

Required Courses (30 hours)
ESCI 1101 Earth Science-Geography (3)
ESCI 1101L Earth Science-Geography Lab (1)
GEOL 1200 Physical Geology (3)
GEOL 1200L Physical Geology Lab (1)
GEOL 3115 Mineralogy (4)
ESCI 3140 Intro to Meteorology and Climatology (3)
GEOL 3190 Environmental Geology (3)
ESCI 4210 Soil Science (4)**
GEOL 4105 Geomorphology (3)
ESCI 4140 Hydrologic Processes (4)
ESCI 4600 Earth Sciences Seminar (1)

*** Classes approved for NC Soil Scientist licensure*

Elective Courses (15 hours)
Students can choose a minimum of 15 hours of earth sciences, geology and pre-approved geography courses numbered 3000 or above from the areas below.

Hydrology Electives
ESCI 3105 Oceanography (3)
ESCI 4155 Fluvial Processes (4)
ESCI 4222 Watershed Science (3)
GEOL 4145 Fundamentals of Hydrogeology (4)
GEOL 4165 Aqueous Geochemistry (4)

Surficial Materials Electives
ESCI 4233 Geoenvironmental Site Characterization (4)
GEOL 3124 Sedimentology (4)
GEOL 4105L Geomorphology Laboratory (1)
GEOL 4115 Applied Geophysics (4)
GEOL 4120 Geochemistry (3)
GEOL 4410 Applied Soil Science (3)

Atmospheric Sciences Electives
METR 3220 Physical Meteorology (3)
METR 3240 Boundary-Layer Meteorology (4)
METR 3245 Synoptic Meteorology (4)
METR 3250 Dynamic Meteorology (4)
METR 3252 Weather Analysis Lab (1)
METR 4150 Applied Climatology (3)

Environmental Information Systems Electives
ESCI 2101 Environmental Dilemma (3)
ESCI 3170 Environmental Quality Management (3)
ESCI 4170 Fundamentals of Remote Sensing (4)
ESCI 4180 Digital Image Processing in Remote Sensing (4)
GEOG 3215 Environmental Planning (3)
GEOG 4120 Introduction to GIS (4)
GEOG 4130 Adv Geographic Information Systems (4)

Additional Required Courses (21 hours)
CHEM 1251 Principles of Chemistry (3)
CHEM 1251L Principles of Chemistry Lab (1)
PHYS 1101 Introductory Physics I (3)
PHYS 1101L Introductory Physics I Lab (1)
CHEM 1252 Principles of Chemistry (3)***
CHEM 1252L Principles of Chemistry Lab (1)***
PHYS 1102 Introductory Physics II (3)***
PHYS 1102L Introductory Physics II Lab (1)***
MATH 1241 Calculus I (3)
MATH 1242 Calculus II (3)
STAT 2122 Introduction to Probability & Statistics (3)

**** Select either CHEM 1252 or PHYS 1102*

Consult the Department of Geography and Earth Sciences for a suggested schedule to complete the B.S. degree with a major in Earth Sciences or see the Department website at www.geoearth.uncc.edu for further information.

MINOR IN EARTH SCIENCES

A minor in Earth Sciences consists of 20 hours of Earth Sciences (ESCI) courses. Requirements include: ESCI 1101 and ESCI 1101L (Earth Sciences Geography) and GEOL 1200 and 1200L (Physical Geology), and 12 additional hours in Earth Sciences and Geology classes. The minor can be tailored to support a number of majors, such as education, engineering, biology, chemistry, or physics.

Required Courses (8 hours)
ESCI 1101 Earth Sciences – Geography (3)
ESCI 1101L Earth Sciences - Geography Lab (1)
GEOL 1200 Physical Geology (3)
GEOL 1200L Physical Geology Laboratory (1)

Recommended Elective Courses (Select 12 hours)
ESCI 3105 Oceanography (3)
ESCI 3170 Environmental Quality Management (3)
ESCI 4140 Hydrologic Processes (4)
ESCI 4155 Fluvial Processes (4)
ESCI 4210 Soil Science (4)
GEOL 1210 Earth History (3)
GEOL 1210L Earth History Laboratory (1)
GEOL 3190 Environmental Geology (3)
GEOL 4105 Geomorphology (3)
GEOL 4105L Geomorphology Laboratory (1)
METR 3140 Intro to Meteorology & Climatology (3)
METR 3240 Boundary Layer Meteorology (4)
METR 3245 Synoptic Meteorology (4)

BACHELOR OF SCIENCE IN GEOLOGY

A major in Geology leading to a B.S. degree consists of a minimum of 45 hours in geology and earth sciences and 18 hours of extradepartmental courses in chemistry, physics and mathematics.

Required Courses (28 hours)
ESCI 1101 Earth Sciences – Geography (3)
ESCI 1101L Earth Sciences – Geography Lab (1)
GEOL 1200 Physical Geology (3)
GEOL 1200L Physical Geology Lab (1)
GEOL 1210 Earth History (3)
GEOL 1210L Earth History Laboratory (1)
GEOL 3115 Mineralogy (4)
GEOL 3124 Sedimentology (4)
GEOL 3130 Structural Geology (4)
GEOL 4130 Optical Mineralogy (4)

Elective Courses (Select 17 hours)
ESCI 4140 Hydrologic Processes (4)
ESCI 4155 Fluvial Processes (4)
ESCI 4170 Fundamentals of Remote Sensing (4)
ESCI 4210 Soil Science (4)
GEOL 3120 Geochemistry (3)
GEOL 3120L Geochemistry Lab (1)
GEOL 3140 Paleontology (3)
GEOL 3190 Environmental Geology (3)
GEOL 3190L Environmental Geology Lab (1)
GEOL 4100 Igneous & Metamorphic Petrology (4)
GEOL 4105 Geomorphology (3)
GEOL 4105L Geomorphology Lab (1)
GEOL 4110 Stratigraphy (4)
GEOL 4115 Applied Geophysics (4)
GEOL 4120 Geologic Mapping & Interpretation (4)
GEOL 4135 Tectonics (4)
GEOL 4145 Fundamentals of Hydrogeology (3)
GEOL 4145L Hydrogeology Lab (1)
GEOL 4165 Aqueous Geochemistry (4)
GEOL 4800 Individual Study in Geology (1)

Required Extra-Departmental Courses
CHEM 1251 Principles of Chemistry (3)
CHEM 1251L Principles of Chemistry Lab (1)
PHYS 1101 Introductory Physics I (3)
PHYS 1101L Introductory Physics I Lab (1)
MATH 1241 Differential & Integral Calculus I (3)
MATH 1242 Differential & Integral Calculus II (3)
AND:
CHEM 1252 Principles of Chemistry (3)
CHEM 1252L Principles of Chemistry Lab (1)
OR:
PHYS 1102 Introductory Physics II (3)
PHYS 1102L Introductory Physics II Lab (1)

The following courses are recommended for students

planning to attend graduate school:

GEOL 4125 Field Camp (6)
GEOL 4800 Individual Study in Geology (3)

MINOR IN GEOLOGY

A minor in Geology consists of a minimum of 20 semester hours in Geology courses. The minor can be tailored to support a number of majors, such as engineering, biology, chemistry, or physics. Upper division earth sciences courses can be applied to the minor with permission of the department.

Required Courses (8 hours)
GEOL 1200 Physical Geology (3)
GEOL 1200L Physical Geology Lab (1)
GEOL 1210 Earth History (3)
GEOL 1210L Earth History Laboratory (1)

Elective Courses (Select 12 hours)
GEOL 3115 Mineralogy (4)
GEOL 3120 Geochemistry (3)
GEOL 3124 Sedimentology (4)
GEOL 3130 Structural Geology (4)
GEOL 3140 Paleontology (3)
GEOL 3190 Environmental Geology (3)
GEOL 3190L Environmental Geology Lab (1)
GEOL 4410 Applied Soil Science (4)
GEOL 4100 Igneous & Metamorphic Petrology (4)
GEOL 4105 Geomorphology (3)
GEOL 4105L Geomorphology Lab (1)
GEOL 4110 Stratigraphy (4)
GEOL 4115 Applied Geophysics (4)
GEOL 4120 Geologic Mapping & Interpretation (4)
GEOL 4125 Geologic Summer Field Camp (6)
GEOL 4130 Optical Mineralogy (3)
GEOL 4135 Tectonics (4)
GEOL 4145 Fundamentals of Hydrogeology (3)
GEOL 4145L Hydrogeology Lab (1)
GEOL 4165 Aqueous Geochemistry (4)
GEOL 4400 Internship in Geology (3-6)
GEOL 4800 Individual Study in Geology (1-4)

Earth Sciences courses that may be applied to the Minor in Geology with departmental permission:
ESCI 4210 Soil Science (3)
ESCI 3105 Oceanography (3)
ESCI 4140 Hydrologic Processes (4)
ESCI 4600 Earth Sciences Seminar (1)
ESCI 4155 Fluvial Processes (4)
ESCI 4170 Fundamentals of Remote Sensing (4)
ESCI 4233 Geoenvironmental Site Characterization (4)

BACHELOR OF SCIENCE IN METEOROLOGY

The Bachelor of Science program in Meteorology comprises 69 hours in required Earth Science, Geology, Mathematics, Chemistry, Physics, and Engineering courses and 7 hours in elective Earth Science courses. Of these 69 hours, a minimum of 20 semester hours will be in Meteorology courses, including METR 3140, METR 3220, METR 3245, METR 3250, METR 4245, and METR 4250. An outline of the Bachelor of Science program in Meteorology appears below. Students enrolled in the Bachelor of Science in Meteorology program must complete a total of 120 hours and fulfill the general education requirements applicable to all baccalaureate degrees at UNC Charlotte.

Required Courses (8 hours)
ESCI 1101 Earth Sciences – Geography (3)
ESCI 1101L Earth Sciences – Geography Lab (1)
GEOL 1200 Physical Geology (3)
GEOL 1200L Physical Geology Lab (1)

Required Upper Division Courses (24 hours)
ESCI 3105 Oceanography (3)
ESCI 4600 Earth Sciences Seminar (1)
METR 3140 Intro to Meteorology & Climatology (3)
METR 3220 Physical Meteorology (3)
METR 3245 Synoptic Meteorology (4)
METR 3250 Dynamic Meteorology (4)
METR 4245 Advanced Synoptic Meteorology (3)
METR 4250 Advanced Dynamic Meteorology (3)

Elective Courses (Select 7 hours)
ESCI 4140 Hydrologic Processes (4)
ESCI 4170 Remote Sensing (4)
ESCI 4180 Digital Image Processing (4)
METR 3240 Boundary Layer Meteorology (4)
METR 3252 Weather Analysis Laboratory (1)
METR 4150 Applied Climatology (3)

Additional Required Courses (30 hours)
CHEM 1251 Principles of Chemistry (3)
CHEM 1251L Principles of Chemistry Lab (1)
ETME 3133 Fluid Mechanics (3)
ETME 3143 Thermodynamics (3)
MATH 1241 Differential & Integral Calculus I (3)
MATH 1242 Differential & Integral Calculus II (3)
MATH 2171 Differential Equations (3)
PHYS 2101 Physics for Science I (3)
PHYS 2101L Physics for Science I Lab (1)
PHYS 2102 Physics for Science II (3)
PHYS 2102L Physics for Science II Lab (1)
STAT 2122 Intro Probability & Statistics (3)

HONORS IN GEOGRAPHY AND EARTH SCIENCES

To graduate with Honors in Geology, Geography, Earth Sciences, or Meteorology, a student must meet the following requirements:

1.) Satisfy all the requirements for the degree sought and the major in Geography, Geology, Earth Sciences, or Meteorology.
2.) Complete at least two courses designated as Honors in the UNC Charlotte course schedule. These may be offered through the University Honors Program or from any of the individual departments that have Honors designated courses. Honors work may be undertaken as early as the first semester of the freshman year.
3.) Maintain at least a 3.2 GPA in all Honors work, 3.25 GPA overall, and 3.2 GPA in all geography, geology, and earth sciences courses taken at UNC Charlotte to satisfy major requirements.

As part of the final 15 hours of course work, the student must (1) register for the Honors section of GEOG 4800/GEOL 4800/ESCI 4800/METR 4800, Individual Study in Geography/Geology/Earth Sciences/Meteorology, and (2) complete a research project to be submitted to a faculty department Honors committee that will certify that the project merits Honors distinction. The candidate must earn the grade *A* on the thesis research. To be certified as Honors quality, a project must contain original research and demonstrate a high degree of scholarship. Students seeking the Honors designation must notify the Honors Committee no later than the second week of classes that the project be evaluated for Honors. Faculty members who serve on the Honors Committee will not evaluate projects completed under their supervision. Instead, another faculty member will be asked to evaluate the project in question along with the other members of the Committee. Should the Committee agree to confer Honors on the student's project, it will certify this to the Department Chair. Should the Committee decide that the project does not warrant Honors, the student will still receive whatever grade the faculty member supervising the project assigns.

Gerontology

www.gerontology.uncc.edu

Director and Graduate Coordinator: *D. Shenk*
Undergraduate Coordinator: *P. Foos*

The Interdisciplinary Program in Gerontology is designed to provide students with academic and field experiences in the area of aging. An understanding of the basic processes of aging and of its social consequences is valuable not only for students who wish to pursue careers directly related to gerontology but also for students interested in traditional careers in other areas and interested in their own aging. As the number of older persons in our society continues to increase, it will be important for people in every occupation and profession to have a basic understanding of the aging process. The goal of the program is to provide students with that basic understanding.

Gerontology is both an interdisciplinary and a multidisciplinary field. Invariably, the best research, training, and service programs in gerontology have developed when professionals from a variety of traditional academic disciplines have been afforded the opportunity to work together, each contributing a unique expertise while benefiting from the expertise of others. The minor in Gerontology is built around a core sequence of interdisciplinary and multidisciplinary courses that are taught by professionals from a variety of different academic disciplines. This approach is designed to bring together information from multidisciplinary sources, integrate theoretical and applied concepts in gerontology, and communicate to students the need for an integrated approach to meeting the needs of older persons.

A minor in Gerontology can be useful in combination with a broad range of majors. With the aging population growing rapidly in the U.S. and globally, there are consequences that translate into diverse career options. Projections indicate opportunities in city planning, administration, management, recreation, counseling, physical therapy, social work, program development, research, long-term care administration and healthcare, for example.

MINOR IN GERONTOLOGY

The minor in Gerontology is awarded only to students completing an undergraduate major at UNC Charlotte. A total of 18 hours in gerontology courses with an overall GPA of 2.5 in those courses is required.

The two ***required courses*** are the following:
GRNT 2100 Aging and the Lifecourse (3)
GRNT 3600 Senior Seminar and Field Experience in Aging (W) (3)

Select at least two of the following ***primary electives:***
GRNT 2124 Psychology of Aging (3)
GRNT 3115 Health and the Aging Process (3)
GRNT 4110 Sociology of Aging (3)
GRNT 4250 Aging Programs and Services (3)

Secondary elective courses may be chosen from the following list of approved courses related to gerontology in consultation with the Gerontology Undergraduate Coordinator. Other appropriate courses may be chosen as electives in consultation with the Gerontology Undergraduate Coordinator.

GRNT 3132 Aging and Culture (W) (3)
GRNT 3267 Sociology of Dying, Death & Bereavement
GRNT 3800 Independent Study in Gerontology (1-8) *(total of 3 credits can be counted toward minor)*
GRNT 4050 Topics in Gerontology (1-4)
GRNT 4260 Women: Middle Age and Beyond (3)
GRNT 4270 Intergenerational Relationships and Programs (3)
PHIL 3228 Biomedical Ethics (3)
PSYC 3125 Older Worker and Retirement (W) (3)
SOCY 3267 Death and Dying
SOCY 4130 Sociology of Health and Illness (3)
GRNT 4134 Families and Aging (3)
GRNT 4150 Older Individual and Society (3)
SOWK 4101 Social Work Practice with Elderly (3)

Students who have earned a bachelor's degree from UNC Charlotte may be readmitted to pursue a minor in Gerontology, just as they may be readmitted to pursue a second major. (For further information on readmission, see the Admission to the University section of this *Catalog*.)

Students who have earned a bachelor's degree from an institution other than UNC Charlotte may not receive a minor in Gerontology from UNC Charlotte (unless they earn a second baccalaureate degree from UNC Charlotte). Such students may request a letter from the program and/or a transcript notation that acknowledges completion of courses specified for the minor but indicates that the minor can only be awarded upon completion of a degree.

The Gerontology Program offers both a Master's degree and a graduate certificate program in Gerontology. See the *UNC Charlotte Graduate Catalog* for more details.

Department of History

www.history.uncc.edu

Interim Chair and Associate Professor: *D. Dupre*
Professors: *J. Buchenau, L. Johnson, C. Kierner, D. Morrill*
Robert Lee Bailey Distinguished Professor: *D. Goldfield*
Charles H. Stone Distinguished Professor: *J.D. Smith*
Professors Emeritus: *R. Rieke, E. Perzel*
Associate Professors: *J. Dávila, D. Dupre, M. Feinberg, J. Flower, J. Hogue, J. Laurent, G. Mixon, S. Ramsey, S. Sabol, H. Thompson, P. Thorsheim*
Assistant Professors: *B. Andres, C. Aydin, K. Cox, K. Flint, C. Haynes, C. Hicks, H. Perry, R. Smith, M. Wilson*
Teaching Professor of History: *E. Brynn*
Lecturers: *O. Lansen, S. McKinley*
Affiliate Faculty: *A. Rauch (ENGL), J. Robinson-Harmon (RELS), T. Rogers (AFRS)*

History is the broadest and most integrative of all disciplines concerned with human beings and society. Today's historians use the research tools of the social sciences to understand and explain major events and changes in human experience over time. Yet history has always been considered one of the humanities, and it remains so because historians are concerned with issues of value and meaning, with the significance that historical events had for the lives of individuals and groups. Students of history gain an understanding of people, groups, and society and a sensitivity both to detailed research and the "big picture." Through the study of history, students can become better prepared for life in a rapidly changing world and a rapidly evolving economy.

Professions like law and medicine have always considered history an ideal undergraduate major because it emphasizes the essential intellectual skills: critical thinking, research, writing, and speaking. For these reasons history also remains a sound preparation for almost any undergraduate and a good choice for the typical student in America, who graduates with a basic education rather than a specific job training. Most history majors, like other majors in the Arts and Sciences, go into a wide variety of jobs in the business world--from sales or communications to research and administration. The most popular history-related field that majors enter is teaching, and the Department of History offers a secondary teacher licensure program in cooperation with the Department of Middle, Secondary, and K-12 Education with the College of Education. Other opportunities for training in history-related fields are available as well. Members of the faculty have expertise and offer courses in historic preservation, local history, and other aspects of public history. Through the master's program history majors can pursue their interests at the graduate level. (See the *UNC Charlotte Graduate Catalog*.)

Study Abroad. Arrangements can be made for study abroad in Asia, Africa, Europe, Latin America or Canada.

BACHELOR OF ARTS

A major in History leading to the B.A. degree requires a minimum of 33 hours in History meeting the requirements for A) Foundations, B) Elective Coursework, and C) Senior Seminar outlined below. In addition there is D) a related work requirement in a foreign language. No more than 6 hours of transfer or AP credit will be counted towards 1000-level courses in the major. The student must achieve a minimum GPA of 2.0 in all history courses.

A. Foundations (9 hours)
HIST 1121 Western Civilization since 1660
HIST 1160 *or* HIST 1161 US History I *or* II
HIST 2100 Introduction to Historical Studies (a skills-based seminar)

Note: HIST 1121 and 1160/61 are normally taken in the freshman or sophomore year; HIST 2100 is normally taken in the sophomore year or as soon as possible after declaring the major.

B. Elective Coursework (21 hours)
a. No more than 3 hours are at the 1000 level. Students seeking secondary certification in History Education are strongly urged to take both HIST 1160 and 1161.

b. At least 6 hours are in Non-Western History (Asia, Africa, Latin America, Middle East)
c. At least 9 hours are at the 3000 level

C. Senior Seminar (3 hours)
HIST 4000, 4001, 4002, or 4300

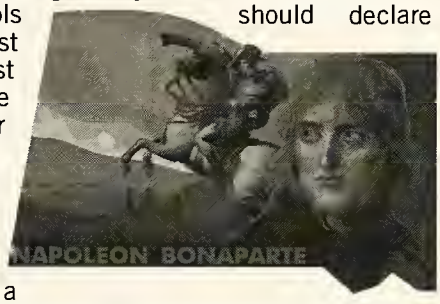
D. Related Work
Students majoring in History must complete either a 2000-level course in a foreign language that uses the Latin alphabet (French, German, Italian, Spanish, etc.) or a 1202-level course in language that is not written in the Latin alphabet (Greek, Hebrew, Japanese, Russian etc.), or demonstrate proficiency at that level. Intermediate American Sign Language is accepted. Non-native speakers of English may complete the foreign language requirement by passing ENGL 1101 and ENGL 1102 or the equivalent.

E. Additional Stipulations
Students doing a second major may count up to nine (9) hours of credit from curses fulfilling requirements in that major towards requirements for the History degree. Students doing a major/minor combination may count up to six (6) hours credit from courses used in the minor towards requirements for the major in History. These stipulations include cross listed courses regardless of program designation under which the course was taken. Exceptions may be approved by the Department Chair upon consultation with the other program.

Note: Students exercising this option should be aware that the accuracy of the on-line degree audit may be affected.

TEACHER LICENSURE

The department, in collaboration with the College of Education and the Department of Middle, Secondary, and K-12 Education, offers a program of history and professional education courses to prepare students for a North Carolina (9-12) teaching license. Students interested in teaching history and social studies in the public schools should declare this interest during the first semester of the sophomore year to obtain appropriate advising and prepare for formal admission to a teacher education program. Students should contact the advisor for teacher education within the Department, as well as the Office of Student Academic Services in the College of Education, for information about the requirements for admission to teacher education, coursework, and the culminating student teaching experience. Additional information about teacher education may be found in the College of Education section of this *Catalog*.



Students seeking teacher licensure in History must complete the requirements for the History major, including at least three semester hours in United States history. Licensure in Comprehensive Social Studies requires an additional 12 hours consisting of: POLS 1110, POLS 1130 or 1150, one ECON course, and LBST 2102-GEOG.

In addition to requirements set by the College of Education, students must have earned a GPA of 2.5 or better in all history and social studies classes for admission to student teaching and ultimately for licensure.

MINOR IN HISTORY

A minor in History consists of 18 semester hours including HIST 1121; no more than six additional hours at the 1000 level; and at least nine semester hours selected from courses above the 1000 level. The student must achieve a minimum grade point average of 2.0 in all history courses.

HONORS PROGRAM IN HISTORY

The Program. The Department of History offers an Honors Program that consists of three courses: HIST 3795, Honors Seminar; HIST 3797, Honors Methods and Practice; and HIST 3799, Honors Thesis. The thesis hours, HIST 3799, are normally taken in the semester before graduation, but research will have begun after completion of HIST 3797. Students considering Honors in History should note that two of the courses in the Honors sequence fulfill requirements for the major: HIST 3795 will fulfill the requirement for HIST 2100 and completion of an honors thesis earning a grade of *C* or better will fulfill the requirement for the 4000-level senior seminar.

Admission. Entry into all honors courses is by permission of the department only, and requires a GPA of 3.25 in History and 3.0 overall. Because HIST 3795 and 3797 are taught in sequence, students must complete their application to the History Honors Program well before their expected graduation. For this reason, qualified students are urged to discuss the History Honors Program with their adviser or a member of the Honors Committee early in their career. Students must also formally apply and be approved for Honors Candidacy by the University Honors Council, a process which will be initiated as part of the HIST 3797 course.

Certification Requirements. To complete the History Honors Program a student must complete HIST 3795, HIST 3797, HIST 3799, and write an Honors thesis of *A* quality as judged by a committee of readers; they must have a GPA of at least 3.2 in the Honors courses. Students must also complete the History major with a GPA of at least 3.25 in all history courses and an overall GPA of at least 3.0.

International Studies

www.uncc.edu/international_studies

Director: *H. Chernotsky*

International Studies is an interdisciplinary program within the College of Arts and Sciences. It draws upon the faculty and courses of a number of departments and is structured to give students skills and knowledge to understand and analyze societies outside the United States in the context of the rapidly changing and increasingly interdependent world. By integrating courses on area studies and world affairs from a variety of departments, the program allows students interested in studying other cultures and societies to focus attention across traditional disciplinary boundaries. International Studies is of particular value to those with career objectives in government, law, journalism, teaching, business, trade, or military service. It also serves those who will seek employment with international organizations such as the United Nations or with non-governmental agencies with an international or cross-cultural focus.

International Studies graduates work for employers such as local, state, and federal governments; international organizations; private sector businesses; nonprofit organizations; colleges and universities; elementary and secondary schools; think tanks; the military; newspapers and magazines; law firms; financial institutions; public relations firms; and the travel industry. They also find careers as foreign service officers, policy analysts, international trade specialists, diplomats, United Nations staffers, lobbyists, intelligence specialists, translators/interpreters, US Customs officers, cultural liaisons, journalists, business managers, government or business consultants, ESL administrators/instructors, professors, teachers, travel/tourism promoters, military officers, and missionaries.

BACHELOR OF ARTS

A major in International Studies requires a minimum of 30 semester hours in courses approved for International Studies credit to include:

- INTL 1101 (Introduction to International Studies)
- one course from each of the three Advanced Core areas designed to enhance global economic, geo/political, and social/cultural awareness
- one required course and four elective courses from within one of the area concentrations offered - **African, Asian, European, Latin American, or Comparative Studies**
- INTL 4601 (International Studies Seminar)

Majors must also complete related work in foreign language and an international experience as stipulated in the core curriculum. Each student, in consultation with an advisor, will prepare a Plan of Study for completion of these requirements upon declaration of the major.

Curriculum:

1.) **INTL 1101.** Intro to International Studies (3)

2.) **Advanced Core (9).** Select one course from each of the following categories. Other courses may be considered if approved by the Director.

- Economic Awareness:
  - INTL 3151 International Political Economy (or POLS 3151)
  - ECON 2101 Principles of Macroeconomics (designated international sections only)
  - ECON 3171 International Business Economics (Prerequisites ECON 2101, 2102)
  - GEOG 3105 Geography of the Global Economy
  - HONR 1702 Economic Welfare and International Communities (or LBST 2102-equivalent Honors Section)
- Geo/Political Awareness:
  - INTL 3111 Politics & Culture in Literature*
  - INTL 3131 Diplomacy in a Changing World
  - GEOG 2165 Patterns of World Urbanization
  - HONR 1701 War, Peace, Justice and Human Survival (or LBST 2101-equivalent Honors Section)
  - POLS 3135 Terrorism
  - POLS 3152 International Organization
  - POLS 3162 International Law
  - POLS 4163 Model United Nations
- Social/Cultural Awareness:
  - INTL 3111 Politics & Culture in Literature*
  - INTL 3112 Globalization and Culture (or ANTH 3112)
  - INTL 3120 Women's Studies International (or WMST 4120)
  - ANTH 2121 Comparative Family Systems
  - ANTH 2122 Beliefs, Symbols and Rituals
  - ANTH 2123 Women in Cross Cultural Perspective
  - ANTH 3111 Culture Change and Applied Anthropology
  - ANTH 3122 Culture, Health and Disease
  - ANTH 3124 Food, Nutrition and Culture
  - ANTH 4120 Intercultural Communication
  - CJUS 4103 International Criminal Justice

COMM 4147 International Public Relations
HONR 3702 Human Rights and Social Justice
RELS 3131 Islam

** INTL 3111 may be used for either the Geo/Political Awareness requirement or the Social/Cultural Awareness requirement.*

3.) **Foreign Language.** Students are expected to demonstrate competency in a foreign language appropriate to the area studies concentration they have selected by completing the equivalent of two courses at the 3000 level or above. Language courses at the 3000 level offered in English do not apply to the foreign language requirement.

4.) **Concentration (15).**

(a) *Area Studies:* Each student will select an area of concentration and will complete the required course designated.

Africa: INTL 2101 Intro to African Studies (3)
Asia: INTL 2201 Intro to Asian Studies (3)
Europe: INTL 2301 Intro to European Studies (3)
Latin America: INTL 2401 Intro to Latin American Studies (3)

An additional 12 hours of elective credit from courses approved within the selected area studies concentration must be completed (see list of recommended courses). While there is no formal requirement as to the distribution of courses across departments, the Plan of Study for area studies must address issues that will further economic, geo/political, and social/cultural awareness.

(b) *Comparative Studies.* Students seeking to focus their study around the comparative analysis of a particular issue or theme may do so with the advice and consent of the Director of International Studies. Students seeking to pursue this option must submit a written proposal to the Director describing the intended course of study. Approval will be based on the merit of the proposal and the anticipated availability of sufficient courses on a regular basis. A total of 15 credit hours from courses approved for the concentration must be completed. An international experience appropriate to the concentration is required. Competency in a foreign language appropriate to the concentration equivalent to the completion of two courses at the 3000 level or above is also required.

5.) **International Experience.** Students are required to complete an international experience related to the area studies concentration they have selected. This may be fulfilled through participation in a formal education abroad program or through foreign-based work, service, or internship activities. This experience must be specified and approved by the Director. Academic credits earned may be applied to the requirements of the major. A U.S.-based experience of an international nature or prior international experience may be considered.

6.) **INTL 4601.** International Studies Seminar (3)

Students pursuing a second major may apply up to nine (9) hours of credit from courses in that major toward the requirements for the major in International Studies. Exceptions may be approved by the Director upon consultation with other program in question. Without exception, courses that are used to fulfill the foreign language requirement for International Studies cannot be used to fulfill other requirements for the major.

MINOR IN INTERNATIONAL STUDIES

A minor in International Studies requires completion of 18 semester hours (and 6 to 8 hours of foreign language at the 2000 level) with a GPA of 2.5 or better. Students will complete 6 hours of introductory course work and 12 hours from courses in a selected concentration. Students will choose a concentration in **African Studies, Asian Studies, European Studies, Latin American Studies or International Business.** A **self-designed** concentration focusing on a particular issue, theme, or region is also available. All students pursuing the minor must have their curriculum approved by the Director of International Studies.

Curriculum:

1) **Core courses:** Six hours of introductory course work selected from:
INTL 1101 Intro to International Studies (3)
and one of the following:
ANTH 1101 General Anthropology (3)
GEOG 1101 World Regional Geography (3)
POLS 1130 Intro to Comparative Politics (3)
POLS 1150 Intro to International Politics (3)

2) **Foreign Language:** Six to eight hours of foreign language at the 2201 and 2202 level in a language appropriate to the selected concentration. If 2201 and 2202 courses are not available, 1201 and 1202 in a second appropriate language may be presented.

3) **Area Concentration.** Twelve hours of related course work appropriate to the selected concentration in **African, Asian, European or Latin American Studies** (see list of recommended courses). All courses must be chosen from outside the student's major and from at least two departments.

For the **International Business** concentration, three of the four courses (nine hours) must be selected from the following *in sequence*:

ECON 3171 Int'l Business Economics (3)
MGMT 3274 Int'l Business Processes & Probs (3)
MKTG 3215 Int'l Marketing Management (3)
FINN 3223 Int'l Financial Management (3)

The fourth course (three hours) may be selected from the list above or from among the following non-business courses:

AFRS 3265 African Economic Development (3)
ANTH 4120 Intercultural Communications (3)
INTL/POLS 3151 International Political Economy (3)

Note: *Enrollment in courses offered from The Belk College of Business is subject to all class standing and prerequisite requirements of The College. These requirements may be waived or modified by permission of the coordinator of the International Business Program or by the Chairperson of the department offering the course.*

Self Designed Concentration: Students choosing to focus their study around a particular issue, theme, or region not covered by the other area concentrations may do so with the prior advice and consent of the Director of International Studies and subject to the regular availability of sufficient courses and an appropriate foreign language.

4) **Education Abroad.** Although not required for the minor, education abroad is encouraged and recommended. The Office of International Programs offers a range of programs of varying duration. Academic credits earned may be applied to the requirements of the minor, subject to approval by the Director.

RECOMMENDED AREA STUDIES COURSES FOR MAJOR AND MINOR

Note: List subject to additions and deletions. Other courses may be considered, subject to approval of the Director.

African Studies

INTL 2101 Introduction to African Studies (or HIST 2211; AFRS 2221)*
AFRS 2205 African Culture (or ANTH 2111)
AFRS 2206 African Literature, Music and Art
AFRS 2207 Introduction to Pan Africanism
AFRS 3265 African Economic Development
AFRS 4101 Modern African Literature in English
AFRS 4105 Foreign Policy of African States (or POLS 3169)
ANTH 2111 Peoples of Africa (or AFRS 2205)
ENGL 4155 Pan African Literature
HIST 2210 Pre-Colonial Africa
POLS 3143 African Politics
POLS 3169 Foreign Policy of African States (or AFRS 4105)

Asian Studies

INTL 2201 Introduction to Asian Studies (or HIST 2201)*
ARTA 2112 Asian Art
HIST 2200 Asian Civilization
HIST 3161 History of Modern China
HIST 3162 Revolutionary Movements in Modern China
HIST 3165 History of Modern Japan
HIST 3168 Women and the Family in Modern East Asia
HIST 3170 Vietnam: Century of Conflict
JAPN 3209 Japanese Civilization and Culture
POLS 3148 Chinese Politics
POLS 3165 East Asia in World Affairs
RELS 2102 Introduction to Asian Religions
RELS 3154 Hinduism
RELS 3157 Buddhism
RELS 3163 Religious Art & Architecture of India
RELS 3166 Taoism
RELS 3169 Zen Buddhism

European Studies

INTL 2301 Introduction to European Studies (or HIST 3116)*
ARTA 3120 20th Century Art in Europe
ENGL 3128 British Literature Since WWI
ENGL 4123 The Modern British Novel
FORL 3160 European Cinema
FREN 2209 French Civilization
FREN 3209 France Today
FREN 4003 Studies in French Literature
FREN 4007 Studies in French Culture and Civilization
FREN 4202 Survey of French Literature II
GERM 3030 Studies in German Culture
GERM 3050 Studies in German Literature
GERM 3160 Survey of German Film
GERM 4204 Survey of German Literature II
HIST 2152 European Women's History
HIST 2252 Russian History From 1917 to the Present
HIST 2261 Britain Since 1688
HIST 2271 Modern France
HIST 2281 Twentieth Century Germany
HIST 3140 Irish History
HIST 3147 The Third Reich
HIST 3148 The Holocaust
PHIL 3213 Modern Philosophy
POLS 3141 European Politics
POLS 3153 European Union
RELS 2101 Introduction to Western Religions
RELS 4101 Religion and Modern Thought
RUSS 3203 Russian Civilization and Culture
SPAN 3209 Spanish Civilization and Culture
SPAN 4202 Twentieth Century Spanish Literature

Latin American Studies

INTL 2401 Intro to Latin American Studies (or HIST 2207)*
AFRS 3190 Political Economy of the Caribbean (or LTAM 3190)
ANTH 2116 Contemporary Latin America (or LTAM 2116)
ANTH 4116 Culture & Conflict in the Amazon (or LTAM 4116)
ARTA 3112 Pre-Columbian Art (or LTAM 3313)
HIST 2206 Colonial Latin America (LTAM 2206)
HIST 3174 Resistance and Adaptation (or LTAM 3274)
HIST 3175 Reform, Riots, Rebellions (or LTAM 3275)
HIST 3176 History of Mexico (or LTAM 3276)
HIST 3177 The Cuban Revolution (or LTAM 3277)
HIST 3178 History of Brazil (or LTAM 3278)
HIST 3179 Authoritarianism in Latin America (or LTAM 3279)
HIST 3260 U.S. and Latin America (or LTAM 3260)
POLS 3144 Latin American Politics (or LTAM 3144)
POLS 3154 Political Economy of Latin America (or LTAM 3154)
POLS 3164 U.S.-Latin American Relations (or LTAM 3164)

SPAN 3019 Hispanic Women Writers in English Translation (or LTAM 3319)
SPAN 3029 Cultural Dimension of Business with Spanish-Speaking Countries (or LTAM 3129)
SPAN 3160 Studies in Hispanic Film (or LTAM 3360)
SPAN 3210 Spanish American Civilization and Culture (or LTAM 3310)
SPAN 3212 Introduction to Spanish American Literature (or LTAM 3312)
SPAN 4120 Advanced Business Spanish I (or LTAM 4120)
SPAN 4121 Advanced Business Spanish II (or LTAM 4121)
SPAN 4210 Studies in Spanish American Poetry (or LTAM 4310)
SPAN 4211 Studies in Spanish American Prose Fiction (or LTAM 4311)
SPAN 4212 Studies in Spanish American Theater (or LTAM 4312)

** Required Course for Major*

Islamic Studies

www.religiousstudies.uncc.edu/Islamic_Studies

Coordinator: *K. Johnson*

The interdisciplinary minor in Islamic Studies is designed to allow students to develop an understanding of Islamic culture, history, philosophy, and religion, and to appreciate the role of Islamic traditions in the development of world civilizations.

MINOR IN ISLAMIC STUDIES

The minor requires the completion of 18 hours, including 9 hours in designated core courses. The remaining courses should be chosen in consultation with the student's adviser in order to best reflect his/her academic interests. Though it is not a requirement, minors are strongly urged to begin gaining proficiency in Arabic. Up to 6 hours of Arabic may be counted toward the minor.

Core Required Courses (9 hours):

RELS 2131 Islam (3)
HIST 2215 History of Muslim Societies (3)
POLS 3133 Politics of the Middle East (3)
or
POLS 3166 Politics of the Islamic World (3)

Elective Courses (9 hours):

Anthropology
ANTH 2115 Culture and Society in the Middle East (3)
ANTH 4090 Readings in Middle East Ethnography (3)
ANTH 4090 Readings in the Anthropology of Religion: Islam (3)
ANTH 4090 Remembering God: Religion and the Senses in the Muslim World (3)

History
HIST 2216/RELS 2216 History of the Modern Middle East (3)
HIST 3169 Central Asia (3)

Languages and Culture Studies
FORL 1201 Arabic (4)
FORL 1202 Arabic (4)

Political Science
POLS 3133 Politics of the Middle East (3)
POLS 3166 Politics of the Islamic World (3)
HONR 3700 Understanding Central Asia: Society, Culture and Politics in Iran and Afghanistan (3)

Religious Studies
RELS 2216/HIST 2216 The Modern Middle East (3)
RELS 4000 Modern Islam: The Quest for Identity (3)

Select special topics courses, certain pre-approved Study Abroad programs, and other courses that may subsequently be included in the *Catalog*, may also be added to the approved list of electives. Students should consult with the Coordinator.

Judaic Studies

www.judaicstudies.uncc.edu

Coordinator: *Isaac Swift Distinguished Professor R. Cohen*

The interdisciplinary minor in Judaic Studies is designed to cultivate an understanding of the breadth of Jewish culture, history, languages, literature, philosophy, religion, along with the Jewish contributions to global cultures.

MINOR IN JUDAIC STUDIES

The minor requires the completion of 18 hours of approved courses offered by at least two departments. At least 9 hours must be in courses at the 3000 level or above. Though it is not a requirement, minors are strongly encouraged to take at least 3 hours in ancient of modern Hebrew.

Below is a representative list of courses that have recently been offered. The complete list of approved courses is updated each semester to reflect the actual course offerings of the

participating departments and is available online.

ENGL 4002	Women in Literature: Jewish Women Writers
ENGL 4050	Literary Responses to the Holocaust
ENGL 4146	Contemporary Jewish-American Literature
FORL 1201	Biblical Hebrew I
FORL 1202	Biblical Hebrew II
GERM 3050	German Holocaust
HIST 2216	History of the Modern Middle East
HIST 3148	The Holocaust
RELS 2104	Hebrew Scriptures
RELS 2110	Judaism
RELS 3104	Prophecy & Prophetic Lit in Ancient Israel
RELS 3107	Psalms and Wisdom Literature
RELS 4000	Advanced Hebrew
RELS 4107	Early Judaism
RELS 4108	Medieval Judaism
RELS 4109	Modern Judaism
RELS 4110	Contemporary Jewish Thought
WMST 3111	Women in Judaism

Department of
Languages and Culture Studies

www.languages.uncc.edu

Chair and Professor: *R. Reimer*
Associate Chair and Professor: *A. González*
Professors: *M. Doyle, M. Miller, M. Noiset*
Professors Emeritus: *N. Bush, K. Gabriel, P. Saman, J. Suther*
Associate Professors: *A. Aliaga-Buchenau, M. Bissière, C. Godev, D. Grote, E. Hopper, R. Rose, R. Sandarg, K. Stephenson, C. Vance*
Associate Professors Emeritus: *S. Cernyak-Spatz, R. Gleaves, C. Merrill*
Assistant Professors: *R. Atencio, J. Batista, C. Coria, F. Kato, J. Kohli, M. Lottman, S. Monder, A. Pujol, P. Youngman*
Assistant Professor Emeritus: *R. McLeod*
Lecturers: *A. Koralova, M. McDermott-Castro, R. Scott, S. Shoji, S. Smith, S. Watts*

The Department of Languages and Culture Studies has designed its programs to develop language skills and to provide insights into foreign cultures through the study of language, culture, literature, and translation. The Department offers the Bachelor of Arts degree with majors in French, German, and Spanish, and minors in French, German, Japanese, Russian, Spanish and Western Antiquity and Classical Languages. Certificates are offered in Translating and Business Language. Chinese, Italian, and Portuguese are offered regularly, and Arabic, Greek, Hebrew, and other languages are offered on demand.

Students interested in foreign language study are encouraged to explore the following options:

- a single major in French, German or Spanish, based on the standard liberal arts model, with or without teaching licensure
- a double major in a foreign language and another discipline or in two languages
- a foreign language minor
- a concentration in one or more languages to complement a major in another academic area
- a concentration of courses leading to a Certificate in Translating or Business Language

Scholarships, Study Abroad, Awards. Scholarships for summer study and employment abroad are available to UNC Charlotte students of French, German, Japanese, Russian, and Spanish. As a rule, applicants are required to be language majors or minors to be eligible, and they must have completed the equivalent of at least two years of study in the language they propose to use abroad. The Department strongly encourages all students to participate in a study abroad program and has exchange programs with universities in Brazil, Chile, China, France, Germany, Japan, Mexico, Poland, Russia, and Spain. The Department regularly presents the following awards: the Mary Jim Whitlow Award for Outstanding Student Achievement in Language Study; the Pierre Macy Award for Excellence in French; and the Karl Gabriel, Robert Reimer, and Susan Cernyak-Spatz Scholarships for Excellence in German and Service to the German Program. For detailed information, contact the Department of Languages and Culture Studies.

BEGINNING AND INTERMEDIATE SPANISH

Beginning and Intermediate Spanish language courses are offered for prospective majors and non-majors. SPAN 1201 and SPAN 1202 make up the first-year Spanish language sequence (first and second semester). A number of courses are then offered at the intermediate level (that is, the third and fourth semesters). The following courses satisfy the first semester of the Intermediate level: SPAN 2200 Spanish for Reading Knowledge; SPAN 2201 Intermediate Spanish I; SPAN 2201L Communication Skills Development I; SPAN 2210 Spanish for Commerce, SPAN 2211 Spanish for Criminal Justice Professionals, and SPAN 2212 Spanish for Health Care Professionals. All of these courses satisfy a first semester intermediate language course required by many majors in the College of Arts and Sciences as well as some other Colleges. Different majors may require a specific course from those listed above. Students should check carefully with an advisor in their own major to determine which third semester course is preferred by their major. All students are also encouraged to study abroad to finish their intermediate language sequence.

BACHELOR OF ARTS

General Requirements for All Majors. All students are required to fulfill General Education requirements described in the *Academic Regulations and Degree Requirements* section of this *Catalog*, in addition to coursework specified below.

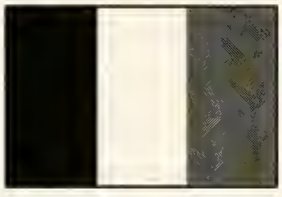
Note: Introductory language courses may not be taken on a pass/no credit basis if they are being used to fulfill a college or departmental foreign language requirement. Students majoring or minoring in Language may not take required courses in the Department on a pass/no credit basis.

Placement. All incoming students must take a UNC Charlotte Placement Exam in the language they wish to study if they have had previous experience with that language. Foreign language majors and minors are advised to take a placement exam to help them determine at what level they should begin studying their chosen language.

Writing-intensive courses (W). All foreign language majors must take at least one W course offered within the department. Such courses include, but are not limited to: FORL 3050, FORL 3160, FREN 2209, GERM 3160, RUSS 3050, RUSS 3203, SPAN 2009, SPAN 3009, and SPAN 3019.

Teacher Licensure. The Department, in collaboration with the Department of Middle, Secondary, and K-12 Education, offers a program to prepare students for K-12 teacher licensure in North Carolina. The student seeking licensure to teach a foreign language must fulfill the General Education requirements, the foreign language major, FORL 4200 and 4201, and all courses required for licensure by the College of Education. Students planning to specialize in foreign language education should apply through the Coordinator for Foreign Language Education during the first semester of the sophomore year to obtain appropriate advising. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.

BACHELOR OF ARTS IN FRENCH



The French major offers two options:

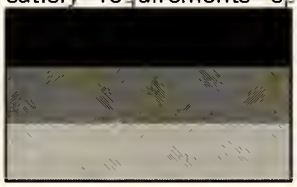
Option A: Requires FREN 2201, 2202, 2207, 3201, 3202, 3203, 3209, 4201, 4202, and two additional courses at the 4000 level. Related work is to be approved by the Department. Students seeking teacher licensure take this option.

Option B: For students with a double major, this option requires FREN 2201, 2202, 2207, 3201, 3202, 3203, 3209, 4201 or 4202, one additional course at the 4000 level, and all courses required for the second major.

Students majoring in French and seeking a Certificate in Translating in French must also take TRAN 3401, 4402, 4403, and 4404, but may substitute TRAN 4402 for one of the FREN 4000-level courses required for the major.

BACHELOR OF ARTS IN GERMAN

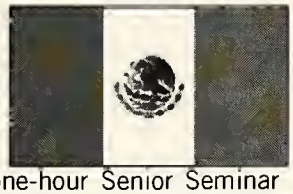
A major in German leading to a B.A. degree requires GERM 2201, 2202 or 2210, 3201, 3202, 3030. 3050 (two courses under different topics; 3160 may be substituted for one 3050), 4203 or 4204, 4010 or 4020, and one additional 3000- or 4000-level German class. German majors must enroll concurrently for one hour of GERM 4050 for each GERM 3030 or 3050 course they take, unless that course was offered in the German language. In addition, 15 hours of related work (or a declared minor), approved by the German language staff, will be required. Candidates for teacher licensure must also take FORL 4200 and 4201 and satisfy requirements specified by the College of Education.



Students majoring in German and seeking a Certificate in Translating in German must also take TRAN 3401, 4402, 4403, and 4404, but may eliminate two courses at the 3xxx and one course at the 4xxx level from the requirements for the major listed above.

Students majoring in German and seeking a Certificate in Business German must take GERM 2210, 4120, and 4121, but may eliminate one of the 3050 courses and one other course at the 3000/4000 level from the requirements for the majors listed above. Upon departmental approval, up to three credit hours earned for GERM 4410 Professional Internship may replace one of the 3000-4000-level courses.

BACHELOR OF ARTS IN SPANISH



The B.A. degree in Spanish offers two tracks: 1) literature/culture emphasis and 2) applied language emphasis. Each track consists of 30 hours of courses in Spanish, plus a one-hour Senior Seminar (FORL 4690). Students majoring in Spanish are strongly encouraged to take courses in another language at least through the Intermediate level. Both tracks require a core of 3 classes:

- SPAN 3201
- SPAN 3202 **or** SPAN 3203
- SPAN 3208

The *literature/culture emphasis* then requires:

- SPAN 3209 **or** 3210
- SPAN 3211
- SPAN 3212

- 12 hours (4 courses) of Spanish at the 4000 level (at least three of these courses must be in literature/culture); for example: SPAN4201, 4202, 4205, 4206, 4210, 4211, 4212, 4213, 4214, 4215, 4216, 4217)
- FORL 4690

The *applied language emphasis* requires, in addition to the three core courses:

- SPAN 3209 **or** SPAN 3210
- SPAN 3211 **or** SPAN 3212
- SPAN 3220
- 12 hours (4 courses) of additional SPAN or TRAN 4000 level courses (at least three of these courses must be in applied Spanish; for example: SPAN 4120, 4121, 4122, 4231, 4232, 4233, TRAN 4402, 4403, 4404)
- FORL 4690

Spanish Honors. For those students who maintain a 3.5 GPA after 21 hours in either of these major tracks, the Department offers an Honors option. Students who choose to participate in the Spanish Honors Program must complete an additional 6 hours by having a 6-hour or longer study abroad experience **or** a professional internship experience of 6 hours (SPAN 4410) or both a 3 hour study abroad and an 3 hour internship experience. Honors students must also take SPAN 4400, where they will write an Honors thesis that must be defended before the departmental Honor's Committee. In addition, students in the Honors option must also study another language at least through 2202 (the end of the Intermediate level).

Latin American Studies. Students pursuing a degree in Latin American Studies should consult the LTAM program in the next section for a description of their language requirements.

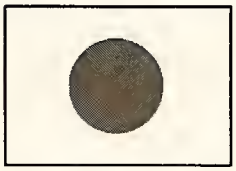
MINOR IN FRENCH

A minor in French requires FREN 2201, 2202, 2207, 3201, 3202, 3203, and 3209. Students who wish to count FREN 2210 toward the minor may take it in lieu of FREN 2207 or 3203.

MINOR IN GERMAN

A minor in German requires 20 hours, as follows: GERM 2201, 2202, 3201, 3202 and six additional hours at the 3000 or 4000 level. A student waived from GERM 2201 and/or 2202 must take the equivalent number of hours in 3000- or 4000-level courses.

MINOR IN JAPANESE



A minor in Japanese requires six courses and at least 20 hours above the 1202 level, as follows: JAPN 2201, 2202, 3201, 3202, 3209, and 3800.

MINOR IN RUSSIAN

A minor in Russian consists of seven courses above the 1202 level, as follows: RUSS 2201, 2202, 3201, 3050, 3202, 3203, and 3800.

MINOR IN SPANISH

A minor in Spanish consists of 15 hours from the following courses: SPAN 3201, SPAN 3202 **or** 3203, SPAN 3208, and 6 additional hours at either the 3000 **or** 4000 level.

MINOR IN WESTERN ANTIQUITY AND CLASSICAL LANGUAGES

The minor requires 15-24 semester hours depending upon student performance on the language proficiency exam. Successful completion of the minor requires GREK 2201 or LATN 2101, or three semesters of Greek and Latin; and four courses selected from at least three of the following:

1.) *Ancient Material Culture:* ARTS 3111 Ancient Art, ARCH 2111 Ancient Architecture

2.) *Ancient History:* HIST 1115 The Ancient World, HIST 3102 History of Rome, HIST 3101 History of Greece, ANTH 3152 Early Civilizations

3.) *Greek and Roman Literature:* ENGL 4210 Greek and Roman Drama, RELS 3101 Greek Myths and Religion

4.) *Greek and Roman Thought:* POLS 3171 History of Classical Political Philosophy, PHIL 3211 Ancient Philosophy, PHIL 3212 Medieval Philosophy. Other courses may be approved by the classics coordinator.

CERTIFICATE IN BUSINESS LANGUAGES

The Certificate in Business Language program (CBL) provides classroom, overseas (optional), and practical training in French, German, or Spanish for international business, which may also be recognized by international examinations. Beginning with an alternative fourth-semester course, the sequence continues with advanced-level course work that includes a two-semester component in advanced business French, German, or Spanish. In order to be awarded the CBL, each course that counts for the certificate must be completed with at least a grade of B. Majors in any field are welcome.

CERTIFICATE IN TRANSLATING

A Certificate in Translating (CT) in the French-English, German-English, or Spanish-English sequence is earned by completion of TRAN 3401 F/G/S, 4402 F/G/S, 4403 F/G/S and 4404 F/G/S, with a grade of C or better in each course. The CT is not equivalent to a

major in a foreign language; rather it represents a theory-based skill developed at the bachelor's degree level. The CT may complement a major in any field, and is especially recommended for majors and minors in French, German, Spanish, International Studies, or International Business. All courses for the CT involve, but are not limited to, translating into English from the source text.

Latin American Studies

www.latinamericanstudies.uncc.edu

Director: *J. Buchenau*

Latin American Studies is an interdisciplinary program within the College of Arts and Sciences. The Latin American Studies program involves a variety of fields, including African-American Studies, anthropology, Spanish and Portuguese language, literature and culture, history, philosophy, and political science. It also includes substantial training and education in Spanish and/or Portuguese. Students may either earn a major (Bachelor of Arts) or a minor in Latin American Studies.

Graduates of Latin American Studies (1) pursue graduate study in the humanities, social sciences, and law; (2) work for companies and agencies serving the growing Hispanic population of our region; and (3) find careers in the foreign service, the military, and other governmental agencies; in non-governmental organizations with an international or cross-cultural orientation; and in international business.

BACHELOR OF ARTS IN LATIN AMERICAN STUDIES

Admission requirements. Students declaring a Latin American Studies major must meet all requirements for undergraduate admission to the university. Students matriculated at UNC Charlotte a nd planning to change to or declare Latin American Studies as their major must have an overall GPA of at least 2.0. Transfer students from other institutions must meet all general requirements for admission to the University. Matriculated and transfer students who do not meet requirements for admission to the program because of special circumstances may petition the Coordinator for acceptance into the program.

Documents required for admission. Students applying for admission to the University and acceptance into the Latin American Studies program must submit all documents specified in the current *UNC Charlotte Catalog*. Matriculated students requesting acceptance into the Latin American Studies program must complete the University Declaration of Major form. Students seeking to apply course work taken at other institutions to the Latin American Studies major must provide a copy of the official course description for each course requested for consideration.

DEGREE REQUIREMENTS

Total hours required. The proposed program leading to the Bachelor of Arts degree in Latin American Studies is a 120 semester-hour program, including completion of all General Education Requirements and at least 30 semester hours in courses approved for Latin American Studies credit.

Grades required. To graduate, students majoring in Latin American Studies must have an overall GPA of at least 2.0, including a GPA of at least 2.0 in the major.

Amount of credit accepted for transfer. Up to 64 semester hours may be accepted from a two-year institution. There is no limit on the number of hours that may be accepted from four-year institutions. All students must complete their last 30 semester hours in residence at UNC Charlotte, including the last twelve hours of the major.

Study Abroad or Work Experience. Students are required to complete a study abroad or work experience in Latin American Studies. This may be fulfilled through participation in a formal study abroad program, through foreign-based work, service or internship activities; through an internship in the United States involving work with Latino populations; or through completing 6 credit hours in a second foreign language current in Latin America such as Spanish, Portuguese, French, or 3 hours in an indigenous language such as Yucatec Maya, Náhuatl, or Quechua. Academic credits earned may be applied to the requirements of the major. At the discretion of the Program Coordinator, prior international experience may be considered.

Language and/or research tool requirements. Students are expected to demonstrate competency in Spanish by completion of two courses at the 3000 level or above, or a combination of Portuguese through the 2000 level and reading knowledge in Spanish equivalent to the completion of SPAN 2050.

CURRICULUM

Introductory Course: LTAM 1100 Introduction to Latin America (3 hours)

Thematic Courses: Two to three courses from each of the following three perspectives (minimum of 24 hours):

1. **Economy and Society** (6-9 hours)
   Courses in this perspective emphasize social science approaches to the study of contemporary Latin America such as anthropology, political science, and business language. Economy and Society courses are designated in the LTAM course catalog by the numbers 21xx, 31xx, 41xx, for example, LTAM 2116 (Contemporary Latin America), LTAM 3144 (Latin American Politics), and LTAM 4120 (Advanced Business Spanish).

2. **Historical Context** (6-9 hours)
   Courses in this perspective focus on the historical development of Latin America since Pre-Columbian times, and they include courses in History and Archaeology. Students must take at least one class on pre-Columbian and/or colonial Latin America. Historical Context courses are designated in the LTAM course catalog by the numbers 22xx, 32xx, and 42xx, for example, LTAM 2206 (Colonial Latin America)and LTAM 3276 (History of Mexico). One of these courses must focus on the pre-colonial and/or colonial periods.

3. **Literature and the Arts** (6-9 hours)
   Courses in this perspective study the cultural production of Latin American peoples such as the arts, literature and film, and they include courses in Art History, Spanish, and film studies. Literature and the Arts courses are designated in the LTAM course catalog by the numbers 23xx, 33xx, and 43xx, for example, LTAM 3360 (Studies in Hispanic Film) and LTAM 4313 (Studies in Spanish American Prose Fiction).

Students doing a second major may count up to nine (9) hours of credit from courses fulfilling requirements in that major towards requirements for the Latin American Studies degree. Students doing a major/minor combination may count up to six (6) hours credit from courses used in the minor towards the requirements for the major in Latin American Studies. These stipulations include cross listed courses regardless of program designation under which the course was taken. Exceptions may be approved by the program director upon consultation with the other program or department. *Note: Students exercising this option should be aware that the accuracy of the on-line degree audit may be affected.*

Students may take LTAM 2000 Topics in Latin American Studies; or LTAM 3000 Advanced Topics in Latin American Studies to help fulfill these requirements. As the topics of these courses vary, students may repeat them for credit. The Director of Latin American Studies will determine which perspective(s) a given section of LTAM 2000 or LTAM 3000 fulfills. With the approval of the program director, students may also apply up to three hours of LTAM 3800 (Independent Study) toward these requirements.

Capstone Seminar. LTAM 4600 Seminar in Latin American Studies may only be taken after completion of at least 18 hours in the major, including LTAM 1100, and fulfillment of the language requirement. As the topic of this course varies, it may be taken more than once to fulfill an elective requirement. In that case, the first LTAM 4600 will fulfill a thematic requirement, and the second course will fulfill the capstone requirement.

Foreign Language. Students are expected to demonstrate competency in Spanish by completion of two courses at the 3000 level or above; or a combination of Portuguese through the 2000 level and reading knowledge in Spanish equivalent to the completion of SPAN 2050.

Experiential Learning. Students are required to complete a study or work experience in Latin American Studies. This may be fulfilled through participation in any one of the following:

A formal study-abroad program of at least 45 contact hours equaling three hours of academic credit.

At least 135 hours of work, service or internship activities in Latin America or with Latino populations in the United States. 3 hours of academic credit for this option are available by enrolling in LTAM 3400 Internship in Latin American Studies.

Course work in another Latin American language in addition to the foreign language requirement above. This option may be fulfilled by completing 6 credit hours in Spanish, Portuguese, or French. Students may also elect to complete 3 hours in an indigenous language such as Yucatec Maya, Náhuatl, or Quechua. As the latter languages are currently not taught at UNC Charlotte, interested students would need to enroll in an off-campus program.

Academic credits earned in the course of fulfilling this requirement may be applied to the requirements of the major.

At the discretion of the Program Coordinator, prior life, study, or work experience may be considered in exempting a student from this requirement.

Honors in Latin American Studies. This optional credential may be awarded to students with a minimum overall GPA of 3.25 and a GPA of at least 3.25 in Latin American Studies courses. To receive honors in Latin American Studies, a student must be approved by the Latin American Studies Honors Committee as well as the University Honors Council. Students who plan to graduate with "Honors in Latin American Studies" must apply for, and be approved for "Honors Candidacy" during the semester prior to the semester they plan to graduate. They must register for three hours of LTAM 4700: Honors in Latin American Studies, during their senior year and present an honors thesis based on in-depth research in primary sources to a committee composed of three members of the Latin American Studies faculty. One of these faculty members will

serve as the student's primary honors thesis adviser. Following an oral defense of the thesis, the committee shall award a grade. A thesis awarded an "A" is acceptable for curricular honors. Students may also obtain honors through the University Honors Program (details available at www.uhonors.uncc.edu).

MINOR IN LATIN AMERICAN STUDIES

Introductory Course (3 hours)
LTAM 1100 Introduction to Latin America

Economy and Society (6-9 hours)
Courses in this perspective emphasize social science approaches to the study of contemporary Latin America such as anthropology, political science, and business language. Economy and Society courses are designated in the LTAM course catalog by the numbers 21xx, 31xx, 41xx, for example, LTAM 2116 (Contemporary Latin America), LTAM 3144 (Latin American Politics), and LTAM 4120 (Advanced Business Spanish).

Historical Context. (6-9 hours)
Courses in this perspective focus on the historical development of Latin America since Pre-Columbian times, and they include courses in History and Archaeology. Students must take at least one class on pre-Columbian and/or colonial Latin America. Historical Context courses are designated in the LTAM course catalog by the numbers 22xx, 32xx, and 42xx, for example, LTAM 2206 (Colonial Latin America)and LTAM 3276 (History of Mexico). One of these courses must focus on the pre-colonial and/or colonial periods.

Literature and the Arts (6-9 hours)
Courses in this perspective study the cultural production of Latin American peoples such as the arts, literature and film, and they include courses in Art History, Spanish, and film studies. Literature and the Arts courses are designated in the LTAM course catalog by the numbers 23xx, 33xx, and 43xx, for example, LTAM 3360 (Studies in Hispanic Film) and LTAM 4313 (Studies in Spanish American Prose Fiction).

NOTE: Among the 15 hours required, not more than six (6) hours may be double counted with another major or minor. This stipulation include crosslisted courses regardless of program designation under which the course was taken. Exceptions may be approved by the program director upon consultation with the other program or department. *Students exercising this option should be aware that the accuracy of the online degree audit may be affected.*

Students may take LTAM 2000 Topics in Latin American Studies or LTAM 3000 Advanced Topics in Latin American Studies to help fulfill these requirements. As the topics of these courses vary, students may repeat them for credit. The Director of Latin American Studies will determine which perspective(s) a given section of LTAM 2000 or LTAM 3000 fulfills. With the approval of the program director, students may also apply up to three hours of LTAM 3800 (Independent Study) toward these requirements.

Foreign Language. Students are expected to demonstrate competency in Portuguese or Spanish by completion of two courses at the 2000 level or above. Additional language training and/or study-abroad is strongly recommended.

Department of Mathematics and Statistics

www.math.uncc.edu

Chair and Professor: *A. Dow*
Associate Chair: *M. Kazemi*
Bonnie E. Cone Distinguished Professor in Teaching Emerita: *M. Leiva*
Professors Emeritus: *A. Lambert, D. Nixon, A. Papadopoulos, N. Schoeps, A. Yushkevich*
Professors: *W. Cai, Z. Cai, X. Dai, Y. Diao, E. Houston, M. Klibanov, T. G. Lucas, T. R. Lucas, S. Molchanov, H. Oh, J. Quinn, H. Reiter, D. Shafer, I. Sonin, Y. Sun, N. Stavrakas, B. Vainberg, B. Weinstock, V. Wihstutz, Y. Zhu*
Associate Professors: *R. Anderson, A. Biswas, C. Burnap, V. Cifarelli, J. Dmochowski, F. Rothe, D. Royster, A. Sáenz-Ludlow, Z. Zhang*
Assistant Professors: *J. Bishwal, J. Chae, M. Dai, S. Deng, Y. Godin, A. Gordon, J. Jiang, O. Safronov, C. Turc, M. Xu, W. Zhou*
Assistant Professors Emeritus: *W. Roth, M. Stewart, H. Wright*
Lecturers: *E. Eagle, S. Funderburk, A. Reznikova, W. Shaban, D. Shafer, C. Sheets, J. Taylor*
Coordinator of Graduate Program: *J. Avrin*
Coordinator of Undergraduate Program: *K. Harris*
Coordinator of Mathematics Education: *V. Cifarelli*

Mathematics has important applications to numerous areas ranging from economics and other social sciences to physics and engineering. It is a challenging and interesting area to study in its own right with a broad and varied curriculum. Of course, graduates with a major in mathematics can become teachers and are in very high demand. However, according to a recent national survey, the majority are employed in careers with private for profit employers. The leading occupations include:

- Accounting and Finance
- Computer Programming
- Sales and Marketing
- Management and Related Positions
- Actuarial
- Computer Systems Analysis
- Statistical and Mathematical Modeling
- Health and Social Services

Career choices for students who concentrate in Statistics would also include those related to the environment, food and drug industry, and the energy sector. Mathematics majors rank the highest in performance on both the LSAT and the GMAT standardized tests for law school and graduate level business programs respectively.

The Department offers graduate programs leading to master's and doctoral degrees. The Ph.D. degree is available in Applied Mathematics. The M.A. degree is available in Mathematics Education. The M.S. degree in Mathematics has tracks in General Mathematics, Applied Mathematics, and Applied Statistics. Additional information on these programs can be found in the *UNC Charlotte Graduate Catalog*.

BACHELOR OF ARTS IN MATHEMATICS

A major in Mathematics for the B.A. degree consists of a minimum of 34 hours of approved mathematics, operations research or statistics courses, including MATH 1241, 1242, 2241, 2242, 2164, 2171, 3163, and 3688; 12 additional hours of approved courses numbered 3000 or above; and MATH 3689 or 3791.

A major in Mathematics also requires ITCS 1214 and related work consisting of 18 hours of approved courses in an area outside the Department of Mathematics and Statistics. All students must meet the General Education requirements of the University.

Concentration in Actuarial Science. A Bachelor of Arts degree in Mathematics with an option in Actuarial Science consists of a minimum of 34 hours of mathematics and statistics courses including MATH 1241, 1242, 2241, 2242, 2164, 2171, 3163, 3688, and 3689. Upper-division courses must include MATH 3122, 3123, 3128, and 3129. It is strongly recommended that students also take STAT 3110 or 3150.

The program also requires ITCS 1214 and at least 18 hours of related work consisting of ACCT 2121, 2122, ECON 2101, 2102, FINN 3120, and 3271. In addition, it is strongly recommended that students take FINN 3272 or 3273. All students must meet the General Education requirements of the University.

Concentration in Statistics. A Bachelor of Arts degree in Mathematics with a Concentration in Statistics consists of a minimum of 34 hours of mathematics and statistics courses including MATH 1241, 1242, 2241, 2242, 2164, 3688, 3689, STAT 2122, STAT 2223 and STAT 3110. Upper level courses must include three courses from STAT 3140, 3150, 3160, and 4116. Optionally, STAT 2122/STAT 2223 may be replaced by STAT 3122/STAT 3123 or by STAT 3128/STAT 3123.

A Bachelor of Science degree in Mathematics with a Concentration in Statistics consists of a minimum of 40 hours of mathematics and statistics courses including MATH 1241, 1242, 2241, 2242, 2164, 3688, 3689; STAT 2122 and STAT 3110. Upper level courses must include MATH 3141, STAT 3122, 3123, and any three courses from STAT 3140, 3150, 3160, and 4116.

It is strongly recommended that students in the Statistics Concentration Program take ITCS 3160 Data Design and Implementation.

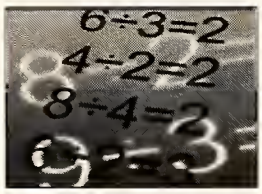
BACHELOR OF ARTS IN MATHEMATICS FOR BUSINESS*

A major in Mathematics for Business for the B.A. degree consists of a minimum of 36 hours of approved mathematics, operations research, or statistics courses, including MATH 1120, MATH 2120, STAT 1220, STAT 2223, MATH 2164, MATH 2428, STAT 3110, OPRS 3111, and MATH 4051; and 9 additional hours of MATH, STAT, or OPRS numbers 3000 and above.

Required in addition are ITCS 1214 and related work consisting of 18 hours of approved courses in an area outside the Department of Mathematics and Statistics or an officially approved University minor. All students must meet the General Education requirements of the University.

BACHELOR OF SCIENCE IN MATHEMATICS

A major in Mathematics for the B.S. degree consists of a minimum of 40 semester hours of approved MATH, STAT or OPRS courses. In addition to the requirements for the B.A. degree, the major in Mathematics for the B.S. degree requires the completion of six additional hours of approved mathematics, operations research, or statistics courses numbered 3000 or above (exclusive of MATH 3163), as well as a minimum of 11 hours of science courses. Upper-division courses must include MATH 3141, 3142, and at least one course from among STAT 3123 and MATH 4163, 4164, 4181, and 5143.



BACHELOR OF SCIENCE IN MATHEMATICS FOR BUSINESS*

A major in Mathematics for Business for the B.S. degree* consists of a minimum of 45 hours of approved mathematics, operations research, or statistics courses, including in its core: MATH 1241, MATH 1242, MATH 2241, MATH 2164, MATH 2171, STAT 2122, STAT 2223, MATH 2428, STAT 3110, OPRS 3111, and MATH 4051. It is recommended and permitted that students take MATH/STAT 3122 and MATH/STAT 3123 in place of STAT 2122 and STAT 2223.

Additionally, ITCS 1214 and related work consisting of 18 hours of approved courses in an area outside the Department of Mathematics and Statistics or an officially approved University minor are required. Furthermore, all students must meet the General Education requirements of the University.

Students majoring in Mathematics for Business must select from one of three concentrations:

Concentration in Economics/Finance. A BS degree in Mathematics for Business requires MATH 4122, MATH 4128, STAT 3150, and an additional 3000 or 4000 level course in MATH, STAT, or OPRS.

Concentration in Actuarial Science. A BS degree in Mathematics for Business requires MATH 3128, MATH 3129, MATH 4128, and an additional 3000 or 4000 level course in MATH, STAT, or OPRS.

Concentration in Operations Research. A BS degree in Mathematics for Business requires OPRS 3112, OPRS 4113, OPRS 4114, and an additional 3000 or 4000 level course in MATH, STAT, or OPRS.

**Students applying for either the B.A. or B.S. degree in Mathematics or Mathematics for Business must have a grade point average of at least 2.0 in each of the following categories: (1) all MATH, STAT, and OPRS courses taken and (2) all 2000 level and above MATH, STAT, and OPRS courses taken.*

TEACHER LICENSURE IN MATHEMATICS

Students preparing for licensure to teach mathematics in secondary school (grades 9-12) must major in Mathematics. They may select either the B.A. or the B.S. degree track, but their coursework must include MATH 3181 and 4109; MAED 3103, 3105, and 3252; and a STAT course together with a number of education related courses. Before the end of the sophomore year, students should obtain an application for formal admission to the teacher education program in the Department of Middle, Secondary, and K-12 Education. Detailed information is available in the Department of Mathematics and Statistics office. Licensure applications are the responsibility of the student and the Office of Teacher Education, Advising, and Licensure in the College of Education.

MINOR IN MATHEMATICS

A minor in Mathematics requires 18 semester hours including MATH 1241and 1242; at least one of MATH 2164 and 2171; one additional course from MATH 2241, 2242, 2164 and 2171, STAT 2122, or any three-hour MATH, STAT, or OPRS 3000 or above; two three-hour MATH, STAT, or OPRS course numbered 3000 or above; and an average GPA of at least 2.0 in these courses.

MINOR IN ACTUARIAL MATHEMATICS

A minor in Actuarial Mathematics requires MATH 1241, 1242, 2241, 2164, STAT 3122 and STAT 3123; and a minimum average GPA of 2.0 in these courses.

Completion of these courses will help prepare the student for the first two actuarial examinations administered by the Society of Actuaries and the Casualty Actuarial Society. The first actuarial exam should be taken as soon as possible after completing Calculus I, II, III and Linear Algebra, and the second examination after completing Probability and Statistics II. Further examinations cover material contained in MATH 3176, OPRS 3111, 3113, and STAT 4123, 4124.

HONORS PROGRAM IN MATHEMATICS

The purpose of the Honors Program in mathematics is to stimulate the imagination and deepen the understanding of students by encouraging independent study and to provide recognition of exceptional achievements in mathematics. Students who complete the requirements of the program graduate with Honors in mathematics.

Admission. Entrance to the Department of Mathematics and Statistics Honors Program is granted by the Department of Mathematics and Statistics, based on the following minimum requirements: (1) junior or senior standing; (2) at least 20 hours in mathematics, including MATH 1241, 1242, 2241, 2171, 2164, and 3163; and (3) a grade point average of not less than 3.0 in mathematics courses and in all University courses.

Students must apply to the Department of Mathematics and Statistics for admission to the program and, if admitted, must select a mathematics faculty member who is willing to serve as an Honors advisor. The Department recommends students admitted to the program to the University Honors Council for formal admission to Honors candidacy. (In order to graduate with Honors the University requires that students be admitted to Honors candidacy at least two semesters before graduation.)

Honors Courses. A Junior Honors Seminar (MATH 3790) and a Senior Honors Tutorial (MATH 3791) are offered, both of which may be repeated for credit.

Certification Requirements. The requirements for graduation with Honors are: (1) completion of all requirements for a Bachelor of Science degree in Mathematics with a grade point average of 3.00 or better; (2) a grade point average of 3.25 or better in all mathematics, operations research and statistics courses and a GPA of 3.5 or better in all mathematics Honors courses; (3) completion of at least six hours of senior honors tutorial (MATH 3791) with a GPA of 3.5 or better, culminating in an Honors thesis approved by the Department of Mathematics and Statistics; and (4) recommendation by the Department of Mathematics and Statistics to the University Honors Council that the student graduate with Honors.

Either the student or the Department may withdraw the student from the Department Honors Program. If the date for dropping courses has passed when the student leaves the program, the student must complete any courses currently in progress in order to receive passing grades in the courses.

COOPERATIVE EDUCATION PROGRAM

A student may participate in the Mathematics Cooperative Education Program in either the parallel or alternate track. The parallel track combines academic study and cooperative experience during the same semester, while the alternate track alternates semesters totally devoted to work with semesters totally devoted to academic study. Students in the Mathematics Cooperative Education Program must participate in a minimum of two semesters in the program. Students interested in participating in the program should contact the Coordinator of Undergraduate Programs in the Department of Mathematics and Statistics or the University Career Center for information.

Department of Music

www.music.uncc.edu

Chairperson: *R. Lumpkin*
Professor: *J. Dillard*
Associate Professors: *L. Marks, M. Mosley, J. Price, D. Sava*
Assistant Professors: *J. Allemeier, W. Campbell, J. Grymes, R. Haldeman, A. Harley, D. Savage, V. Sichivitsa, J. Sullivan*
Lecturer: *R. Dior*

The Department of Music offers majors and non-majors courses for academic credit ranging from performance ensembles and private lessons to academic courses such as the Arts in Society: Music, the History of Rock, and the Evolution of Jazz. Several specialty courses are offered, including those in music theory, piano, ear training, music history, and music education.

A major in music leading to the Bachelor of Music (B.M.) degree offers the student professional training in music performance or music education. while the B.A. in Music degree allows the student to study music in a more traditional liberal arts context. The Master of Arts in Teaching Music degree is offered through the College of Education, and is available to qualified students who desire teaching certification in music and/or wish to earn the Master's degree. For details, please see the *UNC Charlotte Graduate Catalog*.

Most music graduates move directly into the profession as performers or teachers, while many opt for advanced training in graduate programs or internships with professional organizations. Some music majors use their undergraduate training as a foundation for other professions, such as arts management, various private businesses, or church music work.

Most music courses and all performances are held in Robinson Hall for the Performing Arts, a state-of-the-art facility that is shared with the Department of Dance and Theatre. This facility features beautifully designed performance and rehearsal venues, well-equipped "smart" classrooms, practice rooms (including two "V" rooms with variable acoustics), faculty studios, and several specialized instructional spaces, including a recording studio, dedicated percussion practice areas, and a Music Technology lab.

Each student majoring in music, regardless of degree plan or concentration area, is required to perform in an appropriate major ensemble and take Applied Music lessons each semester enrolled*, take six semesters of Recital and Concert Attendance, and pass all portions (piano proficiency, sight-singing proficiency, and sight-reading) of the Sophomore Screening. Please review the departmental *Student Handbook* for details.

**These requirements are applicable neither for music education majors during the semester they are enrolled in Student Teaching nor for B.A. in Music majors during the semester they are enrolled in Senior Project.*

BACHELOR OF MUSIC (B.M.) IN PERFORMANCE

The Bachelor of Music in Performance degree consists of 25 semester hours in the core music curriculum of Structure & Style, Class Piano, Ear Training, Music Practicum, and Music History; 24 credits of specialized music courses including advanced theory, pedagogy, and electives; and no less than eight semesters of Applied Music and eight semesters of enrollment in two ensembles (for a total of 32 credits). A junior recital (30 minutes) and a senior recital (at least 50 minutes) must be presented; authorization to present a recital may be granted only following a hearing by the music faculty. 34 hours of General Education requirements, 6 hours of foreign language, and 3 elective hours make up the remainder of the 124 credits needed for graduation.

BACHELOR OF MUSIC (B.M.) IN MUSIC EDUCATION

The Music Education track of the Bachelor of Music degree is designed to prepare the student for a career as a public or private school music teacher and results in K-12 licensure in the State of North Carolina. Licensure applications are the responsibility of the

student and the Office of Student Academic Services in the College of Education.

The program is divided into three concentration areas: Instrumental, Choral, and General Music, each of which consists of 25 semester hours in the core music curriculum of Structure & Style, Class Piano, Ear Training, Music Practicum and Music History; 33 credits of education courses, including those required for state licensure; no less than 7 semesters of Applied Music and 7 semesters of enrollment in an appropriate major ensemble (for a total of 21 credits); 34 credits of General Education requirements; and a competency requirement for foreign language. For specific course requirements of the Music Education track, refer to the *Department of Music Student Handbook.* All music education majors must present a senior recital (30 minutes) and, in their final semester, enroll in student teaching (15 credits) to complete the 128 credits needed for graduation.

BACHELOR OF ARTS (B.A.) IN MUSIC

The Bachelor of Arts in Music degree consists of 25 semester hours in the core music curriculum of Structure & Style, Class Piano, Ear Training, Music Practicum, and Music History; 34 credits of related-field courses and electives; no less than 7 semesters of Applied Music and 7 semesters of enrollment in an appropriate major ensemble (for a total of 21 credits); 34 credits of General Education requirements; and 6 hours of foreign language. Please review the departmental *Student Handbook* for details. The B.A. in music degree is designed for students who wish to pursue the study of music in a traditional liberal arts environment and who do not desire careers in public school teaching or professional performance. The degree offers maximum flexibility for structuring a course of study characterized by imagination and possibilities for integrating areas of interest. In their final semester, all B. A. in Music majors must submit a senior project (3 credits) to complete the 123 credits needed for graduation.

MASTER OF ARTS IN TEACHING: MUSIC EDUCATION (K-12)

The Master of Arts in Teaching: Music Education (K-12) degree program, offered in conjunction with the College of Education, consists of two separate "phases." Completion of Phase One (minimum of 24 hours) and of any required deficiency courses in Music results in "A" Licensure in one of three concentrations in K-12 music education: General Music; Choral Music or Instrumental Music. Additional completion of Phase Two (minimum of 15 hours) and two years of successful teaching experience results in the awarding of the Master of Arts in Teaching: Music Education (K-12) degree. For specific or updated course requirements of each phase of the program, please refer to the websites of either the Department of Music (www.music.uncc.edu) or the College of Education (http://education.uncc.edu/coe), or see the *UNC Charlotte Graduate Catalog.*

Department of Philosophy

www.philosophy.uncc.edu

Chair and Associate Professor: *M. Kelly*
Professors Emeritus: *L. Kaplan, J. Lincourt, Shumaker*
Mecklenburg County Medical Society Distinguished Professor in Healthcare Ethics: *R. Tong*
Professors: *W. Gay, S. Fishman*
Associate Professors: *M. Croy, J. Presler, E. Souffrant, R. Toenjes*
Assistant Professors: *R. James, L. Rasmussen*
Lecturers: *M. Eldridge, J. Tristan*

Philosophy is reasoned inquiry about the nature of persons, reality, thought, knowledge, values, and beauty. It seeks to establish standards of evidence, to provide rational methods of resolving conflicts, and to create techniques for evaluating fundamental ideas, principles and arguments in all areas of human existence and knowledge. Equally concerned with human endeavor in both the arts and the sciences, philosophy continues to reside at the core of a liberal education.

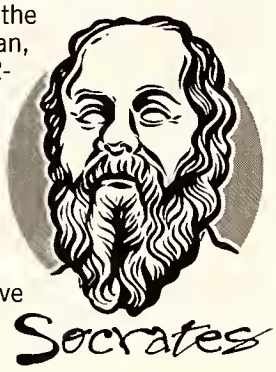
Students major or minor in Philosophy because of their desire to pursue fundamental ideas, principles, and arguments in general or in relation to other disciplines. Philosophy helps students develop strong skills in writing, critical thinking, reading, and understanding complex texts. These skills are indispensable for any committed and concerned citizen. The study of philosophy also provides a deeper understanding and enjoyment of the challenges and issues people face throughout their personal and professional lives.

Students may choose to major solely in Philosophy, or to pursue it as a second major or as a minor. As several members of the department teach regularly within Interdisciplinary Studies, many philosophy courses introduce a wide range of ethical, political, scientific, technological, literary, and aesthetic ideas into discussions of philosophical issues. Courses in critical thinking and logic are a benefit to students in all their coursework and can be especially useful to students who plan to enter graduate school or professional school. Given the department's association with the *Center for Professional and Applied Ethics,* many philosophy courses give students a deeper

understanding of contemporary issues in business, law, med icine, public policy, information technology, and environmental studies.

BACHELOR OF ARTS IN PHILOSOPHY

A major in Philosophy leading to a B.A. degree consists of a minimum of 30 semester hours in philosophy, at least 15 of which are earned at UNC Charlotte with a grade of *C* or better, with no more than nine hours below the 3000 level counting toward the major. A GPA of 2.5 is required for all philosophy courses applied to the major. Students majoring in Philosophy must complete either a 2000-level course in a foreign language that uses the Latin alphabet (French, German, Italian, Spanish, etc.) or a 1202-level course in a foreign language that is not written in the Latin alphabet (Greek, Hebrew, Japanese, Russian, etc.), or demonstrate proficiency at that level. Intermediate American Sign Language is accepted. Non-native speakers of English may complete the foreign language requirement by passing ENGL 1101 and ENGL 1102 or the equivalent. Students must elect a concentration in either Traditional or Applied Philosophy.



Concentration in Traditional Philosophy. Students who select a concentration in Traditional Philosophy are required to take PHIL 2101(Introduction to Philosophy), 2105 (Deductive Logic), 3211 (Ancient), 3213 (Modern), and 3214 (Contemporary). Of the remaining 15 hours, at least nine must be in a traditional historical period or figure (e.g., Medieval, American, Introduction to Political Philosophy, Plato, Descartes) or in a traditional problem area (e.g., Aesthetics, Ethics, Metaphysics, Feminist Philosophy, Social and Political Philosophy). A list showing the courses classified as "traditional" and "applied" is available in the Department of Philosophy.

Concentration in Applied Philosophy. Students who select a concentration in Applied Philosophy are required to take PHIL 2101 (Introduction to Philosophy), either 1105 (Critical Thinking) or 2105 (Deductive Logic), and at least two courses in a traditional historical period, figure or problem. Of the remaining 18 hours, at least 12 are to be selected from courses in applied philosophy (e.g., Business Ethics, Philosophy in and of Literature, Healthcare Ethics). These courses may represent a theme in which the student has a particular interest and be planned in consultation with the student's advisor. The selected theme will reflect the student's interests in a particular area which may coincide with a second major. This theme may involve requirements outside of the Department of Philosophy, but only philosophy courses may be counted toward the 30 hours required for the major. A list showing the courses classified as "traditional" and "applied" is available in the Department of Philosophy.

MINOR IN PHILOSOPHY

A minor in Philosophy consists of 15 semester hours in philosophy, at least nine of which are earned at UNC Charlotte with a grade of *C* or better, with no more than six hours below the 3000 level counting toward the minor. Students who elect the minor are required to take the following courses and types of courses: PHIL 2101; one course in Logic (PHIL 1105, 2105, or 3235); and two courses in a traditional historical period, figure, or problem area. Traditional historical periods or figures include History of Ancient, Medieval, Modern, Contemporary, and American Philosophy, Introduction to Political Philosophy, Plato, and Descartes. Traditional problem areas include Aesthetics, Ethics, Metaphysics, Feminist Philosophy, and Social and Political Philosophy. A list showing the courses classified as "traditional" and "applied" is available in the Department of Philosophy.

HONORS PROGRAM IN PHILOSOPHY

Students seeking a greater academic challenge may contact the Department Chair with a request to pursue the Honors Track within the philosophy major. Honors work may be undertaken as early as the first semester a student is enrolled at the University. Graduation with Honors will be noted on the student's transcript and the phrase "Honors in Philosophy" inscribed on the student's diploma.

To qualify for graduation with Honors in Philosophy a student must receive the recommendation of the Honors Committee in Philosophy. The Honors Committee will consider as candidates for Honors in Philosophy students who have completed the standard philosophy major and the following requirements: a) two three-hour courses chosen by the student from University Honors courses (taken under the LBST designation); b) a grade of *A* for four hours of honors thesis research (which count toward the 30-hour major requirement); c) oral presentation of the Honors Thesis before the Department of Philosophy Honors Committee, other faculty, and students; d) GPA of at least 3.5 in all Philosophy courses counted toward the major; and e) GPA of at least 3.2 for all departmental and University Honors courses submitted towards graduation with Honors.

Department of
Physics and Optical Science

www.physics.uncc.edu

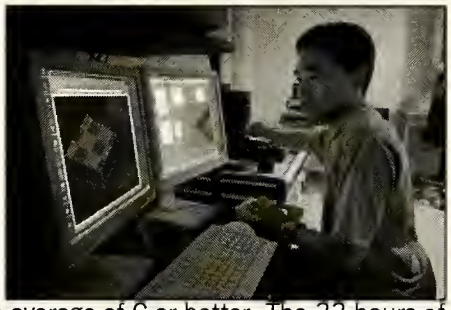
Chair and Professor: *F. Farahi*
Professors Emeritus: *R. Vermillion, J. Werntz*
Professors: *T.M. Corwin, M. Fiddy, E. Johnson, Y. Raja*

Associate Professors Emeritus: *T. Mayes, E. Oberhofer, H. Simpson*
Associate Professors: *Y. Aktas, A. Davies, W. Melton, P. Moyer, T. Suleski , S. Trammell, R. Tyson*
Assistant Professors: *V. Astratov, A. Baumketner, M. Dancy, N. Fried, G. Gbur, T. Her, D. Jacobs*
Lecturers: *E. Benchich, P. Leilabady*
Adjunct Professors: *E. Buckland, J. Gaiser, S. Mosier, R. Splinter, R.H. Svenson, J. Ting, R. Tsu*

If you like mathematics and science, a physics career offers many opportunities. Physics offers challenging, exciting, and productive careers. The Department offers programs leading to the Bachelor of Arts and Bachelor of Science degrees. The Department offers options in astrophysics, optical science, and teacher licensure, as well as dual degrees in Electrical and Computer Engineering, and in Mechanical Engineering. Students majoring in physics are prepared to enter a variety of technical fields, attend medical school, teach in high school, or to attend graduate school. Research physicists work in industry and government, in laboratories and hospitals, and on university campuses.

BACHELOR OF ARTS

The Bachelor of Art degree is appropriate for students seeking an in-depth understanding of physics within the context of a broader education. This curriculum allows the greatest freedom in choosing electives offered by other departments, and is ideal for students wishing to pursue double majors, matching physics with another discipline. A major in Physics leading to the B.A. degree consists of at least 33 semester hours of physics with an average of C or better. The 33 hours of physics must include eight hours in an introductory sequence of either PHYS 1101, 1102, 1101L, and 1102L or PHYS 2101, 2102, 2101L, and 2102L. The remaining 25 hours must include PHYS 1000, PHYS 3101, PHYS 3121, PHYS 3141, PHYS 4231, PHYS 4241, either PHYS 3282 or PHYS 3283, plus six additional hours at the 3000-4000 level. Also required are CHEM 1251, 1251L and MATH 1241, 1242, 2171, 2241, and 2242. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 33-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Freshmen should complete MATH 1241 before the beginning of their second year.



SUGGESTED CURRICULUM: B.A. DEGREE IN PHYSICS

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 1000	1	PHYS 2101 and 2101L	4
CHEM 1251 and 1251L	4	MATH 1242	3
MATH 1241	3	Foreign Language Requirement (if required)	3-4
Foreign Language Requirement (if required)	3-4	General Degree Requirements (2)	6
General Degree Requirement	3		

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 2102 and 2102L	4	PHYS 3101	3
MATH 2171	3	PHYS 3141	3
Foreign Language Requirement	3-4	MATH 2241	3
General Degree Requirements (2)	6	General Degree Requirements (2)	6

Junior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 3121	3	PHYS 3282 (W,O)	3
MATH 2242	3	PHYS 4231	3
Electives (3)*	9	Electives (3)*	9

Senior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 4241	3	PHYS Elective*	3
PHYS Elective*	3	Electives (4)*	12
Electives (3)*	9		

**One of the PHYS or General electives must be designated as a (W) course.*

BACHELOR OF ARTS: SECONDARY TEACHER LICENSURE OPTION

Students preparing to teach high school physics may become licensed by earning the B.A. Degree: Secondary Teacher Licensure Option. A major in

Physics with this option consists of a minimum of 120 semester hours that fulfill the general degree requirements of the University and that include at least 33 semester hours in physics with an average grade of *C* or better. The 33 hours of physics must include eight hours in an introductory sequence of either PHYS 1101, 1102, 1101L, and 1102L or PHYS 2101, 2102, 2101L, and 2102L. The remaining 25 hours must include PHYS 1000, PHYS 3101, PHYS 3121, PHYS 3141, PHYS 3282, PHYS 3283, PHYS 4231, PHYS 4241, plus three additional hours at the 3000-4000 level. Also required are CHEM 1251, 1251L, MATH 1241, 1242, 2171, 2241, and 2242, and other courses specified by the Department of Middle, Secondary, and K-12 Education. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 33-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Freshmen should complete MATH 1241 before the beginning of their second year.

A schedule to complete the Secondary Teacher Licensure Option within a 4-year period has little flexibility due to the large number of required courses. The student should obtain a "Suggested Schedule" from the Department of Physics and Optical Science, make arrangements for an advisor in the Department of Middle, Secondary, and K-12 Education, and obtain an up-to-date listing and schedule for required education courses. Licensure applications are the responsibility of the student and the Office of Teacher Education Advising and Licensure (TEAL) in the College of Education.

BACHELOR OF SCIENCE

The Bachelor of Science degree is appropriate for students planning to pursue physics as a professional career, either immediately after graduation in a physics related industry or after undertaking graduate study in physics. A major in Physics leading to the B.S. degree consists of at least 45 semester hours of physics with an average of C or better. The 45 hours of physics must include eight hours in an introductory sequence of PHYS 2101, 2102, 2101L, and 2102L. Under special circumstances, and with the approval of the Undergraduate Studies Committee, PHYS 1101, 1102, 1101L, and 1102L may be substituted for the PHYS 2101-2102 sequence. The remaining 37 hours must include PHYS 1000, PHYS 3101, PHYS 3121, PHYS 3141, PHYS 3151, PHYS 3282, PHYS 3283, PHYS 4231, PHYS 4232, PHYS 4241, and at least nine additional hours at the 3000-4000 level. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 45-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Also required are CHEM 1251, 1251L, ITCS 1214, MATH 1241, 1242, 2171, 2241, and 2242. Freshmen should complete MATH 1241 before the beginning of their second year. Students planning for graduate study in physics are strongly advised to take PHYS 4242 as part of their 3000-4000 level elective hours.

SUGGESTED CURRICULUM: B.S. DEGREE IN PHYSICS

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 1000	1	PHYS 2101 and 2101L	4
CHEM 1251 and 1251L	4	MATH 1242	3
MATH 1241	3	ITCS 1214	3
General Degree Requirements (2)	6	General Degree Requirements (2)	6

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 2102 and 2102L	4	PHYS 3101	3
MATH 2171	3	PHYS 3141	3
General Degree Requirements (3)	9	MATH 2241	3
		Electives (2)	6

Junior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 3121	3	PHYS 3282 (W,0)	3
PHYS 3283 (W)	3	PHYS 4231	3
MATH 2242	3	PHYS Elective	3
Electives (2)	6	Electives (2)	6

Senior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 4232	3	PHYS 3151	3
PHYS 4241	3	PHYS Elective	3
PHYS Elective	3	Electives (3)	9
Electives (2)	6		

BACHELOR OF SCIENCE WITH A CONCENTRATION IN ASTROPHYSICS

The Bachelor of Science with a Concentration in Astrophysics degree is appropriate for students who wish to receive a rigorous general education in physics complemented with coursework and research in astrophysics. This curriculum is ideal for students who wish to pursue careers and/or graduate study in astrophysics. A major in Physics leading to the B.S. degree with a concentration in astrophysics option consists of at least 45 semester hours of physics with an average of C or better. The 45 hours of physics must include eight hours in an introductory sequence of PHYS 2101, 2102, 2101L, and 2102L. Under special circumstances, and with the approval of the Undergraduate Studies Committee, PHYS 1101, 1102, 1101L, and 1102L may be substituted for the PHYS 2101-2102 sequence. The remaining 37 hours must include PHYS 1000, PHYS 3101, PHYS 3121, PHYS 3141, PHYS 3151, PHYS 3160, PHYS 3161, PHYS 3282, PHYS 3283, PHYS 4231, PHYS 4241, PHYS 4242, and at least three additional hours at the 3000-4000 level. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 45-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Also required are CHEM 1251, 1251L, ITCS 1214, MATH 1241, 1242, 2171, 2241, and 2242. Freshmen should complete MATH 1241 before the beginning of their second year.

SUGGESTED CURRICULUM: B.S. DEGREE IN PHYSICS WITH A CONCENTRATION IN ASTROPHYSICS

Freshman Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 1000	1	PHYS 2101 and 2101L	4
CHEM 1251 and 1251L	4	MATH 1242	3
MATH 1241	3	ITCS 1214	3
General Degree Requirements (2)	6	General Degree Requirements (2)	6

Sophomore Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 2102 and 2102L	4	PHYS 3101	3
MATH 2171	3	PHYS 3141	3
General Degree Requirements (3)	9	MATH 2241	3
		Electives (PHYS 1130 suggested) (2)	6

Junior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 3121	3	PHYS 3282 (W,O)	3
PHYS 3283 (W)	3	PHYS 4231	3
MATH 2242	3	PHYS 3160	3
Electives (2)	6	Electives (2)	6

Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 3161	3	PHYS 3151	3
PHYS 4241	3	PHYS 4242	3
PHYS Elective	3	Electives (3)	9
Electives (2)	6		

BACHELOR OF SCIENCE WITH A CONCENTRATION IN OPTICAL SCIENCE

The Bachelor of Science with a Concentration in Optical Science degree is appropriate for those students who wish to receive a rigorous general education in physics complemented with coursework and research in optical science. Students who choose to undertake this degree will be required to complete specific courses in addition to those in the traditional branches of physics that will broaden their understanding in the areas of waves and optics, electrodynamics, and modern optics. This curriculum is ideal for students who wish to pursue careers and/or graduate study in the discipline of optical science. A major in Physics leading to the B.S. degree with a concentration in optical science consists of at least 45 semester hours of physics and engineering with an average of C or better. The 45 hours must include eight hours in an introductory sequence of PHYS 2101, 2102, 2101L, and 2102L. Under special circumstances, and with the approval of the Undergraduate Studies Committee, PHYS 1101, 1102, 1101L, and 1102L may be substituted for the PHYS 2101-2102 sequence. The remaining 37 hours must include PHYS 1000, PHYS 3101, PHYS 3121, PHYS 3141, PHYS 3282, PHYS 4231, PHYS 4232, PHYS 4241, PHYS 4271, PHYS 4281, at least six additional hours at the 3000-4000 level, and ECGR

4125. Also required are CHEM 1251, 1251L, ITCS 1214, MATH 1241, 1242, 2171, 2241, and 2242. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 45-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Freshmen should complete MATH 1241 before the beginning of their second year.

SUGGESTED CURRICULUM: B.S. DEGREE IN PHYSICS WITH A CONCENTRATION IN OPTICAL SCIENCE

Freshman Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 1000	1	PHYS 2101 and 2101L	4
CHEM 1251 and 1251L	4	MATH 1242	3
MATH 1241	3	ITCS 1214	3
General Degree Requirements (2)	6	General Degree Requirements (2)	6

Sophomore Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 2102 and 2102L	4	PHYS 3101	3
MATH 2171	3	PHYS 3141	3
General Degree Requirements (3)	9	MATH 2241	3
		Electives (2)	6

Junior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 3121	3	PHYS 3282 (W,0)	3
PHYS 4271	3	PHYS 4231	3
MATH 2242	3	Electives (3)	9
Electives (2)	6		

Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 4125	3	PHYS 4281 (W)	3
PHYS 4232	3	PHYS Electives (2)	6
PHYS 4241	3	Electives (2)	6
Electives (2)	6		

BACHELOR OF SCIENCE: SECONDARY TEACHER LICENSURE OPTION

Students preparing to teach high school physics may become licensed by earning the B.S. Degree: Secondary Teacher Licensure Option. The student must (a) fulfill all requirements for the B.S. Degree and (b) complete the additional courses required by the College of Education. The student should make arrangements for an advisor in the Department of Middle, Secondary, and K-12 Education, and obtain an up-to-date listing and schedule for required education courses. It is generally not possible to complete this option within four years without attending summer sessions. Licensure applications are the responsibility of the student and the Office of Teacher Education Advising and Licensure (TEAL) in the College of Education.

DUAL DEGREE PROGRAMS WITH ELECTRICAL AND COMPUTER ENGINEERING

The Department of Physics and Optical Science offers two dual degree opportunities with the Department of Electrical and Computer Engineering. These dual degrees are designed to broaden and enhance the education of students in engineering degree programs. Students can obtain a B.S. Physics and B.S. Electrical Engineering dual degree or a B.S. Physics and B.S. Computer Engineering dual degree.

B.S.E.E./B.S. IN PHYSICS

To obtain a dual B.S. degree in Electrical Engineering and Physics, an undergraduate student must complete all requirements for the B.S.E.E. degree as established by the Department of Electrical and Computer Engineering. In addition, the student must complete 12 hours of upper division physics courses specified by the Department of Physics and Optical Science. To meet the upper division physics requirements, students must complete the following courses: PHYS 3121 (Classical Mechanics), PHYS 4241 (Quantum Mechanics), and 6 elective hours chosen from a list of approved courses available from the Department of Physics and Optical Science. A B.S. in Physics under this program will be awarded at the same time as the B.S.E.E. The B.S. Physics degree will not be awarded in advance of the engineering degree.

B.S.Cp.E./B.S. IN PHYSICS

To obtain a dual B.S. degree in Computer Engineering and Physics, an undergraduate student must complete all requirements for the B.S. Cp.E. degree as established by the Department of Electrical and Computer Engineering. In addition, the student must complete 12 hours of upper division physics

courses specified by the Department of Physics and Optical Science. To meet the upper division physics requirements, students must complete the following courses: PHYS 3121 (Classical Mechanics), PHYS 3141 (Introduction to Modern Physics), PHYS 4231 (Electricity and Magnetism), PHYS 4241 (Quantum Mechanics). Students must also complete MATH 2241. A B.S. in Physics under this program will be awarded at the same time as the B.S.Cp.E. The B.S. Physics degree will not be awarded in advance of the engineering degree.

DUAL DEGREE PROGRAM WITH MECHANICAL ENGINEERING

The Department of Physics and Optical Science offers a dual degree opportunity with the Department of Mechanical Engineering. The dual degree is designed to broaden and enhance the education of students in the engineering degree program. Students can obtain a B.S. Physics and B.S. Mechanical Engineering dual degree.

B.S.M.E./B.S. PHYSICS

To obtain a dual B.S. degree in Mechanical Engineering and Physics, an undergraduate student must complete all requirements for the B.S.M.E. degree as established by the Department of Mechanical Engineering. In addition, the student must complete 12 hours of upper division physics courses specified by the Department of Physics and Optical Science. To meet the upper division physics requirement, students must complete the following courses: PHYS 3141 (Introduction to Modem Physics), PHYS 4231 (Electromagnetic Theory I), PHYS 4241 (Quantum Mechanics I), and 3 elective hours chosen from a list of approved courses available from the Department of Physics and Optical Science. A B.S. in Physics under this program will be awarded at the same time as the B.S.M.E. The B.S. Physics degree will not be awarded in advance of the engineering degree.

MINOR IN PHYSICS

A minor in Physics is available to all undergraduates except physics majors and requires a minimum of 17 hours of physics with an average grade of *C* or better. There are two options:

Option 1: PHYS 2101, 2102, 2101L, 2102L, 3141, and at least six additional hours at the 3000-4000 level selected from a list of approved courses that is available in the Department of Physics and Optical Science. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 17-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee.

Option 2: PHYS 1101, 1102, 1101L, 1102L, 3101, 3141, and at least three additional hours at the 3000-4000 level selected from a list of approved courses that is available in the Department of Physics and Optical Science. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 17-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee.

HONORS PROGRAM IN PHYSICS

To obtain a degree with Honors in physics, a student must maintain at least a 3.0 average in all physics courses, complete PHYS 3900H (Senior Project), and successfully present the results of their project to a panel of faculty members. Details concerning this program are available from the Department of Physics and Optical Science.

COOPERATIVE EDUCATION PROGRAM

Students majoring in Physics have an opportunity to combine work experience with their academic experience. The Cooperative Education Program is a plan whereby a student completes his/her lower-division coursework and, after being formally accepted as a co-op student, alternates periods of academic coursework with periods of paid employment in an area mutually agreed upon by the student, an employer, and the University. Further information regarding Cooperative Education can be found in the Student Services and Programs section of this *Catalog*. Information regarding the application procedure for admission into this program can be obtained from the Department of Physics and Optical Science or the University Career Center.

Department of
Political Science

www.politicalscience.uncc.edu

Chair and Professor: *R. Kravchuk*
Professors Emeritus: *D. Dorin, D. Fleitas, N. Jamgotch, W. McCoy, T. Mead*
Distinguished Professors: *T. Arrington, W. Brandon, C. Combs, K. Godwin*
Professors: *S. Brenner, M. Brown, H. Chernotsky, S. Lyons*
Associate Professors: *C. Brown, J. Douglas, E. Heberlig, S. Leland, G. Rassel, D. Swindell, J. Walsh, G. Weeks*
Assistant Professors: *J. Carman, R. Christensen, M. Kropf, T. Manuel, J. Piazza, B. Whitaker, B. Wright*
Lecturer: *N. Caste*

Political science is the study of politics: government, law, political behavior, public policy, and political philosophy. The political science curriculum is designed primarily to afford broad and modern training in the study of political institutions and political behavior for students in the liberal arts and majors planning graduate work. It also affords career-oriented or preprofessional training for teaching, law, business, public relations, or work in the mass

media, domestic and foreign government service, the military, teaching, and a variety of active roles in politics.

On the graduate level, the Department offers the Master of Public Administration, a professional degree for persons seeking training in public administration with specialization in local government and non-profit management. The department is also one of the social science departments that offers an interdisciplinary Ph.D. in Public Policy. (For more information, see the *UNC Charlotte Graduate Catalog*.)

Careers with Political Science. Political science majors gain analytical skills and communication abilities that are valued in a wide spectrum of potential career areas. An undergraduate degree in political science can lead to interesting careers in local, state, or federal government; law; private businesses; international organizations; the military; nonprofit organizations; political campaigns; journalism; teaching; public office; research and teaching at universities.

BACHELOR OF ARTS

A major in Political Science for the B.A. degree requires 30 semester hours of political science to include: (1) POLS 1110 (American Politics); (2) POLS 1130 (Comparative Politics); (3) POLS 1150 (International Politics); (4) POLS 2220 (Political Science Methods) or equivalent social science methods course; (5) at least one course in the subfield of Political and Legal Philosophy; and (6) at least one of the following courses: POLS 4110 (North Carolina Student Legislature), POLS 4163 (Model United Nations), POLS 4990 (Senior Thesis), or POLS 4600 (Senior Seminar). No more than nine hours of credit from POLS 4110, 4163, 4400, or 4800 can be offered to fulfill major requirements. POLS 2220 and one of the senior courses listed above fulfill the writing intensive courses required for graduation.

Concentration in Comparative and International Politics. Students may opt to receive the Bachelor of Arts in Political Science with a concentration in Comparative and International Politics. Requirements include at least 12 semester hours (as part of the required 30 hours in political science) in courses listed under Comparative and International Politics in this catalog. Students seeking this concentration must also complete a 200-level course in a foreign language or demonstrate proficiency at that level, or complete a study abroad experience approved by the Education Abroad Office of the Office of International Programs. American Sign Language is not acceptable. Majors seeking this concentration are encouraged to diversify their coursework by completing the major or minor in International Studies.

Concentration in Public Policy. Students may earn the Bachelor of Arts degree in Political Science with a concentration in Public Policy by completing 12 semester hours as part of the required 30 hours in political science. This 12 hours must include POLS 2120 and at least 9 hours selected from: POLS 3114, 3115, 3121, 3124, 3125, 3126, 3132, 3135, 3154, 3157, 3161, 3169, 3175 or some other public policy course specifically designated by the Chair of the Political Science Department. To receive the concentration in Public Policy the students must also complete an introductory economics course (ECON 1101, 2101, or 2102). Note that both ECON 2101 and 2102 are highly recommended, but not required.

Advanced Placement Program. Students who receive an evaluation of Qualified (3) or better on the Advanced Placement examination in American Politics will receive credit for POLS 1110. Students who receive an evaluation of Qualified (3) or better on the Advanced Placement examination in Comparative Politics will receive credit for POLS 1130.

MINOR IN POLITICAL SCIENCE

The political science minor requires18 semester hours of political science. The student can choose any combination of courses with the POLS designation to fulfill this requirement with the following exceptions:

1) No more than nine hours of credit from POLS 4110, 4163, 4400 or 4800 can be offered to fulfill minor requirements.
2) Although students may repeat POLS 4110, 4163, 4400, or 4800 for credit, no more than three hours of credit from any one of these courses may be used to fulfill the requirements for the minor in political science.

HONORS PROGRAM

To graduate with Honors in Political Science and have this fact affixed to the student's transcript, a student must:

a) Comply with all of the requirements for a major in Political Science
b) Complete at least two Honors courses in the University Honors Program or in individual departments with a GPA at UNC Charlotte of at least 3.25
c) Have an overall GPA at UNC Charlotte of at least 3.25
d) Have a GPA of at least 3.4 in all Political Science courses taken at UNC Charlotte
e) Complete the Senior Thesis in Political Science (POLS 4990) with a grade of *A* and licensure of the Department Honors Committee that the thesis deserves a grade of *A* and is of Honors quality

To be certified as Honors quality, a thesis must contain original research and demonstrate a high

degree of scholarship. Students seeking the Honors designation must notify the professor who is directing their thesis no later than the second week of classes that the thesis should be evaluated for Honors requirements. The directing professor will notify the Honors Committee. Students would work on their thesis under the same procedures as all other students, but would then submit their thesis for evaluation by the Honors Committee. Faculty members who serve on the Honors Committee would not evaluate senior theses completed under their supervision. Instead, the Honors Committee would ask another faculty member to evaluate the thesis in question along with the other two members of the Committee. If the Committee agreed to confer Honors on the student's thesis, it would certify this to the Department Chair. If the Committee decided that the thesis did not warrant Honors, the student would still receive whatever grade the faculty member supervising the thesis had assigned.

Department of Psychology

www.psych.uncc.edu

Chair and Professor: *B. Cutler*
Associate Chair and Associate Professor: *L. Van Wallendael*
Bonnie E. Cone Distinguished Professor in Teaching: *A. Maisto*
Professors Emeritus: *L. Diamant, P. Lamal, R. Simono*
Professors: *L. Calhoun, A. Cann, P. Foos, P. Goolkasian, D. Grimsley, S. Rogelberg, R. Tedeschi, W. S. Terry*
Associate Professors Emeritus: *C. Fernald, C. Kaplan, G. Long, D. Sohn*
Associate Professors: *A. Blume, K. Buch, J. Cook, G. Demakis, M. Faust, J. Gaultney, D. Gilmore, S. Johnson, R. Kilmer, J. Lee, R. McAnulty, A. Peterman, W. Siegfried*
Assistant Professors: *A. Blanchard, V. Gil-Rivas, N. Gordon, E. Heggestad, C. Reeve, J. Welbourne*
Lecturers: *M. Chiarella, S. Spaulding*

Psychology is the study of behavior. Psychologists are interested in discovering new knowledge about human and animal behavior and in applying that knowledge. Some of the questions psychology considers are:

- How do we learn and remember information?
- Why do people develop behavior disorders?
- What are the changes involved in moving from infancy to old age?
- How do other people influence our behavior?
- How is behavior regulated by the brain?
- How do we perceive the physical world?
- How do psychological factors affect physical health?

Psychology is a young and a dynamic science and profession. Most of what we know has been learned in the last 50 years. Much is left to be learned by the psychologists of the future.

The Department of Psychology offers a Bachelor of Arts (B.A.), a Bachelor of Science (B.S.), an undergraduate minor in Psychology, a Master of Arts (M.A.) degree, and a Ph.D. in interdisciplinary Health Psychology. The primary objective of the undergraduate programs is to provide a solid background in the fundamentals of psychology as a science. Graduates of the program should be prepared for a variety of careers or for graduate study.

Although many careers in psychology require an advanced degree, opportunities for individuals with a bachelor's degree in psychology include serving as a teacher or psychological assistant in social service agencies, mental health centers, child care centers, centers for the mentally challenged or the emotionally disturbed, and juvenile delinquent or predelinquent homes. Students whose interests are more laboratory-oriented might become laboratory technicians or research assistants. Also, psychology majors find their skills useful in various areas of business, such as management, advertising, personnel, public relations, and marketing.

Graduate school is a possibility after the student completes the B.A. or the B.S. degree. For a psychologist with a master's degree or doctorate, the career opportunities grow (see *UNC Charlotte Graduate Catalog* for information on the M.A. and Ph.D. programs). In addition, many psychology graduates broaden their skills by attending graduate schools in the areas of business, counseling, criminal justice, education, and law.

BACHELOR OF ARTS

A major in psychology leading to the B.A. degree consists of 29 hours of psychology. These hours must include General Psychology (1101 and 1101L), Research Methodology (2102), History and Systems (3103), a Senior Seminar (4613, 4619, 4625, 4630, 4650, 4655, 4660, or 4670), one unrestricted elective, and two courses from each of two Restricted Elective categories: Scientific Foundations of Practice and Scientific Psychology.

Scientific Foundations of Practice: Students will select at least two courses which must be from different areas:

- Area 1: Individual Differences and Dysfunctional Behavior (PSYC 2150, 3135, 3151)
- Area 2: Human Development (PSYC 2120, 2121, 2124)
- Area 3: Practice (PSYC 2160, 2171, 3155)

Scientific Psychology: Students will select at least two courses which must be from different areas.

- Area 1: Biological Aspects (PSYC 3110, 3113, 3115, 3117)
- Area 2: Cognitive/Affective Aspects (PSYC 3111, 3114, 3116, 3316)
- Area 3: Social Aspects (PSYC 3130)
- Area 4: Psychological Measurement (PSYC 3140)

Students must select at least three hours of electives in psychology to fulfill the 29-hour requirement for the B.A.

Electives should be selected to aid the student in the attainment of personal goals. However, the student cannot include more than three hours credit in PSYC 3405 and three hours credit in PSYC 3806 in the 29-hour requirement of the major, nor will the student be allowed to apply more than eight hours in PSYC 3405 or PSYC 3806 to the 120 hours required for the B.A.

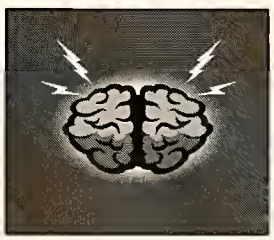
Other specific requirements for the B.A. degree include: STAT 1222 (Elements of Statistics) and majors must satisfy the University General Education requirements listed for the Bachelor of Arts Degree.

Related Work. Students pursuing a B.A. in Psychology are expected to be exposed to a depth of knowledge in at least one domain outside of psychology through their completion of the Related Work Requirement. Related Work should be considered in terms of the fulfillment of individual educational and vocational aspirations. Students must select one of the following options.

- Option 1: Complete a second major
- Option 2: Complete a minor in a domain outside Psychology

A GPA of 2.0 must be achieved for the major, as well as for the second major or minor. A grade of C or better in PSYC 1101 and PSYC 2102 is required to progress in the major.

BACHELOR OF SCIENCE



A major in psychology leading to the B.S. degree consists of 35 hours of psychology. These hours must include General Psychology (1101 and 1101L), Research Methodology (2102), History and Systems (3103), a Senior Seminar (4613, 4619, 4625, 4630, 4650, 4655, 4660, or 4670), nine hours of unrestricted electives, and two courses from each of two categories: Scientific Foundations of Practice and Scientific Psychology.

Scientific Foundations of Practice: Students will select at least two courses which must be from different areas:

- Area 1: Individual Differences and Dysfunctional Behavior (PSYC 2150, 3135, 3151)
- Area 2: Human Development (PSYC 2120, 2121, 2124)
- Area 3: Practice (PSYC 2160, 2171, 3155)

Scientific Psychology: Students will select at least two courses which must be from different areas.

- Area 1: Biological Aspects (PSYC 3110, 3113, 3115, 3117)
- Area 2: Cognitive/Affective Aspects (PSYC 3111, 3114, 3116, 3316)
- Area 3: Social Aspects (PSYC 3130)
- Area 4: Psychological Measurement (PSYC 3140)

Students must select at least nine hours of electives in psychology to fulfill the 35-hour requirement for the B.S.

Electives in psychology should be selected to aid the student in the attainment of personal goals. However, the student cannot include more than three hours credit in PSYC 3405 and three hours credit in PSYC 3806 in the 35-hour requirement of the major, nor will the student be allowed to apply more than eight hours in PSYC 3405 or PSYC 3806 to the 120 hours required for the B.S.

Other specific requirements for the B.S. degree include: STAT 1222 (Elements of Statistics) and majors must satisfy the University General Education requirements listed for the Bachelor of Science Degree.

Reasoning and Natural Science Requirements. Students pursuing a B.S. in Psychology are expected to be exposed to a depth of knowledge in reasoning and the natural sciences. Students must select from one of the following options:

- *Option 1*: Complete a second major in Biology or Chemistry or Computer Science or Math.
- *Option 2*: Complete a minor in Biology, Chemistry, Computer Science, Math, Neuroscience, or Cognitive Science, or other minor approved by the Department.
- *Option 3*: Complete six hours from among: PHIL 1105; PHIL 2105; PHIL 3235; PHYS 1101; Any CSCI; Any OPRS; Any MATH above 1105; Any STAT above 1222.
  AND complete 18 hours of biology or chemistry including at least three courses with labs and any two additional courses from the areas of Biology and Chemistry.

A GPA of 2.0 must be achieved for the major, as well as for the second major, minor, or *Option 3* hours. A grade of C or better in PSYC 1101 and PSYC 2102 is required to progress in the major.

Course Sequences Within the Major. The Department of Psychology offers course sequences designed to provide a more in-depth exposure to certain areas of Psychology. Sequences are currently available in Clinical, Cognitive, Community, Developmental, Health, Industrial/ Organizational, Physiological, and Social Psychology, and Psychometrics. In addition, the Department of Psychology actively participates in several interdisciplinary areas of study including Gerontology, Women's Studies, and Cognitive Science. Detailed information about course sequences and interdisciplinary areas of study is contained in the Department of Psychology Student Handbook which is available in the Psychology Office or online at www.psych.uncc.edu.

Consult the Department of Psychology web page (www.psych.uncc.edu) for a Suggested Schedule to complete the B.A. or B.S. degree with a Major in Psychology.

MINOR IN PSYCHOLOGY

A minor in psychology consists of 19 semester hours of psychology to include PSYC 1101, 1101L, and a minimum of one course from both the Scientific Foundations of Practice Area and the Scientific Psychology Area. A minimum of six hours of coursework at the 3000 level or above is required. No more than three semester hours of PSYC 3806 may be counted toward the minor, and PSYC 3405 may not be used for the minor.

Department of
Religious Studies

www.religiousstudies.uncc.edu

Chair and Professor: *J. Tabor*
Isaac Swift Distinguished Professor: *R. Cohen*
Blumenthal Professor: *J. Reeves*
Associate Professors: *A. Burlein, K. Johnson, J. Robinson, J. D. White*
Assistant Professors: *S. McCloud, Mozina, J. Hammer, J. Robinson-Harmon, J. Schott*
Lecturers: *T. Katsanos, C. Sinclair, B. Thiede*

Religious studies is the academic inquiry into the fundamental stories, myths, symbols, and practices by which we as human beings have attempted to make sense of ourselves and the worlds in which we live. In addition to courses in Western, Asian, African, and Native American religious traditions, the department offers courses in the interaction of religion and modern culture in such areas as art, literature, language, film, science, and issues of race and gender. The department is explicitly committed to the liberal arts tradition with an international and pluralistic perspective.

Most students major or minor in Religious Studies to gain a broad liberal arts education. With the flexibility of the program and its relationship to other areas of the University, students can meet the specific objectives of Religious Studies while taking a wide range of courses in other departments. Some students relate religious studies to definite vocational plans, often requiring further education in professional and graduate schools.

BACHELOR OF ARTS

A major in religious studies requires 30 semester hours in religious studies courses as follows:

I. Foundational Courses (9 hours). Three required courses: RELS 2101 Introduction to Western Religions, RELS 2102 Introduction to Asian Religions, and RELS 2600 Approaches to the Study of Religion.

II. Courses in two different religious traditions (6 hours). One course in a Western tradition selected from: RELS 2110 Judaism, RELS 2120 Christianity, or RELS 2131 Islam. One course in an Asian tradition selected from: RELS 2154 Hinduism, RELS 2157 Buddhism, RELS 2166 Taoism, or RELS 3169 Zen Buddhism.

III. Religion and modern culture (6 hours). Two courses selected from the following: RELS 2137, 3050, 3209, 3212, 3242, 4010, 4050, 4101, 4201. The specific topics for RELS 3050 and 4050 are announced each semester.

IV. Two religious studies electives (6 hours). Any two additional courses in religious studies.

V. Senior seminar (3 hours). In their senior year, all religious studies majors must complete RELS 4600. This seminar includes completion of a senior essay and an oral presentation to students and faculty.

MINOR IN RELIGIOUS STUDIES

A minor in Religious Studies consists of a minimum of 15 hours, with at least two courses at the 3000 level or above.

Minors in Islamic Studies and Judaic Studies are also available. For information on either of these, please see their individual sections in this *Catalog*.

ROTC: Aerospace Studies

www.afrotc.uncc.edu

Chairman: Professor (Mil.): *S. Rose*
Assistant Professors (Mil.): *T. Agnew, F. Jackson*

Aerospace Studies prepares students for leadership positions with the United States Air Force through the **Pre-professional Program** and offers courses to all students through the **Academic Program.** The curriculum examines multi-disciplinary issues as they relate to leadership participation in the military environment.

ACADEMIC PROGRAM

The academic program (without affiliation with the formal Air Force ROTC program) is designed for students interested in gaining a perspective on military leadership, management, ethics, and discipline. Students who pursue this concentration should take the upper-level (AERO 3100 and 3200) courses, and they may attend the lower-level courses. Participation in Leadership Laboratory courses is available by special permission from the Department.

Pre-professional Program/Air Force ROTC Program. The pre-professional track of the Aerospace Studies program is implemented as the Air Force Reserve Officer Training Corps. It provides three programs for students to qualify for a commission as a second lieutenant in the Air Force. To be eligible for the Air Force ROTC pre-professional program, a student must be a citizen of the United States, physically qualified for commission in the Air Force, not under 14 years of age and, upon graduation, no more than 34 years of age (may be waived to age 35). If designated for flight training, the student must be able to complete all commissioning requirements prior to age 29.

Cadets must pursue work leading to at least a bachelor's degree and be willing to sign a formal agreement at the beginning of the advanced course or upon initiation of a college scholarship. The agreement, an enlistment into the Air Force Reserve, obligates the student to remain in the ROTC program, accept a commission and serve the required period in the Air Force upon graduation. Cadets must also take an Air Force Officer Qualifying Test (AFOQT) and achieve certain minimum and quantitative scores prior to commissioning.

Four-Year Program. This program begins with the General Military Course (GMC) and offers coursework within the lower-division. GMC students not on Air Force ROTC scholarship incur no military obligation. Each candidate for commissioning must pass each GMC course with a grade of *C* or better and pass the corequisite lab. Students must score appropriately on an Air Force aptitude test, pass a physical fitness test, pass a medical examination, and be selected by a board of Air Force officers. If selected, the student then enrolls in the Professional Officer Course (POC), the last two years of the Air Force ROTC curriculum. Students attend a four-week field training course at an Air Force base normally between the sophomore and junior years. All students in the POC receive a tax-free stipend of at least $350 per month. Upon successful completion of the POC and the requirements for a degree, the student is commissioned in the Air Force as a second lieutenant.

Three-Year Program. The basic requirement for entry into the three-year program is that the student has three academic years of college work remaining, either at the undergraduate or graduate level, or a combination of both. Applicants seeking enrollment in the three-year program must take both the freshman-level and sophomore-level aerospace studies classes in the Fall and Spring semesters of their sophomore year. They must also pass Air Force aptitude, physical fitness, and medical examinations and be selected by a board of Air Force officers. Students attend a four-week field training course at an Air Force base normally between the junior and senior years. All students in the POC receive a tax-free stipend of at least $350 per month. Upon successful completion of the POC and the requirements for a degree, the student is commissioned in the Air Force as a second lieutenant.

SCHOLARSHIP PROGRAMS

Air Force ROTC awards scholarships at the freshman through graduate school levels for students in the pre-professional track leading to a commission in the Air Force. They are available to qualified cadets in the three year program and four-year programs. Scholarships are given and retained on a semester basis.

Full-time enrollment in the University or a consortium institution and the Aerospace Studies program is a requirement for scholarship eligibility. Scholarships cover tuition, fees, and a book allowance. Scholarship cadets also receive a tax-free stipend of at least $250 a month.

Four-year scholarships also are available to high school students. High school students interested should apply online at www.afrotc.com. Initial four-year scholarship packages must be postmarked by December 1 of the year prior to enrollment.

ADJUNCT PROGRAMS

Field Training. Four-week Field Training courses are normally completed during the summer between the sophomore and junior years for the four-year program (junior and senior years for the three-year program). Transportation, lodging, meals, and approximately $200 per week are provided by the Air Force during Field Training.

Leadership Laboratory. Those students pursuing the pre-professional track will participate a minimum of three hours per week during every semester of enrollment. The objective is to provide a laboratory environment where each student receives an opportunity to learn and develop leadership and management abilities. Cadets plan, organize and carry out the entire leadership laboratory program with only minimal guidance from the staff advisors. Physical fitness training is also a part of the leadership laboratory program.

Professional Development Program. Students enrolled in the freshman or junior year of Air Force ROTC may volunteer to attend a two- or three-week orientation program at an Air Force base. This is an opportunity to observe and experience the working environment of an active Air Force facility and to obtain specific career information. Other programs available to students include glider flight orientation, military airborne jump training, foreign language immersion, combat survival training, and summer engineering projects. Transportation, lodging, meals, and approximately $200 per week are provided by the Air Force during participation in this voluntary program.

Flight Training. All cadets who currently do not possess a private pilot's license may participate in an eight-hour flight orientation program any time during enrollment in AFROTC.

ROTC: Military Studies

www.arotc.uncc.edu

Professor (Mil.): *R. McCall*
Assistant Professor (Mil.): *Hale*

Participation in Army ROTC enhances the education of both men and women by providing unique leadership and management training, along with practical experience in these areas. It helps students develop many of the qualities basic to success in the Army, or in civilian careers. Students earn a college degree and an officer's commission at the same time. The program is designed to complement the student's major area of study; participation in Army ROTC is compatible with all major areas of study. The Basic Course and the Advanced Course comprise the Military Science curriculum.

BASIC COURSE

The Basic Course is usually taken during the freshman and sophomore years. It is open to all students and incurs no military obligation. Topics include management principles, leadership development, national defense organization, land navigation, small unit tactics, survival techniques, military courtesy, and physical training. Uniforms and textbooks are provided at no cost to students. Students unable to attend the Basic Course, may still qualify for the Advanced Course by attending a paid four-week summer Leader's Training Course at Fort Knox, Kentucky, following their sophomore year. Placement credit is also available for veterans, members of the reserve components, and Junior ROTC participants.

ADVANCED COURSE

The Advanced Course provides instruction in military history, advanced tactics, techniques of effective leadership, and military ethics and professionalism. It is normally taken during the junior and senior years. Students successfully completing the Basic Course, who have demonstrated the potential to become officers and meet Army physical and academic standards, are eligible to enroll in the Advanced Course. Students receive a monthly tax-free stipend of $350 per academic year as junior and $400 per month during their senior year. Students are required to attend a paid four-week summer Leader Development and Assessment Course at Fort Lewis, Washington, between their junior and senior years. In addition to Military Science courses, students must complete HIST 2120 American Military History. Nursing students may enter the Advanced Course without Basic Course credit.

Nursing Summer Camp. Nursing students enrolled in the Advanced Course attend a two-part summer camp between the junior and senior years. This consists of four weeks of Leader Development and Assessment Course at Fort Lewis, Washington, followed by three weeks of practical nursing training. The nurse intern training may be at Fort Lewis, Washington, or any other major Army Medical Center nationwide.

SCHOLARSHIP PROGRAM

Two-, three-, and four-year scholarships are awarded on a competitive basis, providing full tuition and educational fees, a specified amount for books and supplies, and a tax-free tiered stipend of $250, $300, $350 or $400 per academic month. Four-year scholarships are available to students who apply while in high school or prior to enrollment. Students do not have to be enrolled in Army ROTC to apply and incur no obligation by applying. Application timeframe is December to February each year. Special consideration is given to students in nursing, engineering, and physical sciences.

COMMISSION REQUIREMENTS

To obtain a commission in the Army, Army National Guard, or Army Reserve, a student must successfully complete the Advanced Course, be recommended by the Professor of Military Science, and complete work leading to at least a baccalaureate degree.

Department of Sociology

www.sociology.uncc.edu

Chair and Professor: *C. Brody*
Professors: *R. Mickelson, T. Scheid, M. Webster, J. Whitmeyer*
Associate Professors: *J. Aulette, R. Hopcroft, L. Lance, L. Rashotte, D. Zablotsky*
Assistant Professors: *Y. Cao, S. Fitzgerald, J. McLaughlin, S. Moller, E. Stearns, W. Zhao*
Lecturers: *M. McKenzie, P. Rutledge*

The Department of Sociology offers academic majors leading to a Bachelor of Arts degree. On the graduate level, the Department offers the M.A. degree in Sociology.

Sociology is the scientific study of human social life. It focuses upon the forces that organize and structure societies and smaller groups, as well as the forces that disorganize and threaten to dissolve them. As a science, sociology applies an objective and systematic method of investigation to identify the patterns and forms of social life and to understand the processes by which they are established and changed.

The study of sociology is attractive to persons seeking a liberal education and immediate employment, as well as to persons preparing for further study and professional careers. As a liberal arts program, it enables students to understand the social contexts in which they find themselves and the social forces that shape personality, actions, and interactions with others. As a preprofessional program it provides an excellent background for persons entering social work, law, teaching, the ministry, journalism, planning, public relations and personnel services. It also provides analytical skills related to market research and program evaluation in human services, sales, management and other business activities.

BACHELOR OF ARTS

A major in Sociology leading to the B.A. degree consists of: (1) a minimum of 32 semester hours of sociology courses; including (2) a core curriculum of SOCY 1101, 3153 or 3154, 4155, and 4156; (3) at least 23 hours at the 3000 level or above (but may include SOCY 2090); (4) at least three hours designated W in the major; and (5) a minimum of 18 semester hours of related work or a minor.

Related work is arranged by the student in consultation with an advisor and may consist of a concentration of courses: (1) within a single discipline; (2) selected from two complementary disciplines; or (3) focused upon a specific topic. Students in the teacher licensure program may use the courses in the professional education sequence as their related work. Students should consult with the Department about internship opportunities in sociology.

MINOR IN SOCIOLOGY

The minor in Sociology requires the completion of 18 hours in sociology including Introduction to Sociology and at least one course at the 3000 or 4000 level. A grade point average of at least 2.0 is required in the 18 hours of sociology.

EARLY ENTRY PROGRAM: Master's in Sociology

Criteria for Acceptance

1.) Students must have completed at least 75 undergraduate hours
2.) Students must have at least a 3.2 GPA overall, and a 3.5 GPA in Sociology courses
3.) The student must take the GRE exam and earn scores that are acceptable for graduate admission

The Program

Students who meet the above requirements will be accepted into the Graduate Program, conditional upon their successful completion of the requirements for their undergraduate degree, 18 hours in social science, and the required core undergraduate classes (Evolution of Social Thought, Research Methods, and Statistics).

Students will be allowed to take only 15 hours of graduate credit before they have completed their baccalaureate degree. They must maintain an undergraduate GPA of at least 2.7 in order to remain in the program. Students' undergraduate GPA must be at least 3.0 when they graduate.

Students may count only six hours for both undergraduate and graduate degrees. Neither the Pro-seminar in Applied Social Research nor electives may be counted toward both the B.A. and the M.A.

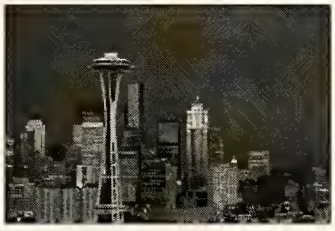
Urban Studies

www.geoearth.uncc.edu/programs/undergrad/urbanminor.htm

Director: *H. A. Smith*
Affiliate Faculty: *K. Chilton; J. Gamez; I. Heard; G. Ingalls; Z. Lin; T. Moore, S. Moller; D. Morrill; S. Leland; G. Mixon; P. Thorsheim; D. Walters; Q. Wang*

MINOR IN URBAN STUDIES

A minor in Urban Studies requires completion of 18 hours taken from the following courses: ANTH 2125 (Urban Anthropology) or SOCY 4125 (Urban Sociology); ARCH 1100 (History of American Architecture); GEOG 2165 (Patterns of World Urbanization); URBS 2200/GEOG 2200 (Introduction to Urban Studies); GEOG 3100 (City and Region); GEOG 4205 (Internal Structure of the City); HIST 3281 (American Cities); HIST 3214 (Urban South); HIST 3280 (Blacks in Urban America); POLS 3121/GEOG 3100 (Urban Politics/Urban Political Geography); or URBS 3050 (Topics in Urban Studies). With prior permission from the Urban Studies Director, students may also select from URBS 3801 (Urban Studies Independent Study) or URBS 4401 (Urban Studies Internship). A student may also count up to 9 hours of other courses that have a significant urban focus with the prior permission of the Director of the Urban Studies minor in the Department of Geography and Earth Sciences.



Women's Studies

http://womensstudies.uncc.edu

Director: *C. Wayland*
Adjunct Professors: *M. Miller, D. Shenk, R. Tong*
Adjunct Associate Professors: *J. Aulette, R. Booth, A. Burlein, S. Gardner, S. Johnson, A. Newman, M. Pizzato, L. Rashotte, K. Stephenson, L. Van Wallendael*
Adjunct Assistant Professors: *M. Feinberg, E. Gargano, J. Hartman, R. James, M. Lottman, E. Miller, J. Munroe, H. Perry, C. Scott, C. Tetreault, A. Toscano*
Adjunct Program Associates: *L. Acker, S. Masse*

The Women's Studies Program offers undergraduate and graduate students opportunities to learn about issues relating to gender, women, and feminism. Students may choose to take individual courses, a cluster of related courses, or a full minor in Women's Studies. The Women's Studies Program is committed to fostering personal growth by challenging gender stereotypes of women and men and equipping individuals with the knowledge and skills necessary to empower women and improve gender relations in an ever changing society. Most students find Women's Studies courses personally interesting, as well as helpful preparation for careers in health and human services, education, law, human resources, art, and business.

MINOR IN WOMEN'S STUDIES

The Women's Studies minor is open to all students regardless of gender and requires completion of at least 18 hours in approved courses. A maximum of nine hours may be earned from any one department or program outside of Women's Studies. Students minoring in Women's Studies must complete the following requirements:

1) WMST 1101 Introduction to Women's Studies (3) **OR** WMST 3102 Changing Realities of Women's Lives (3)
2) WMST 3220/3221 Feminist Thought (3) **OR** WMST 3227 Feminist Philosophy (3) **OR** Another Approved WMST topics course (to be determined by coordinator)
3) Any WMST at the 4000 level
4) Nine hours of electives

Elective courses can be chosen from any department's or program's offerings, as long as (a) the course deals substantially with gender, women, feminism, sexuality, or related social movements and (b) the courses are approved by the Director of Women's Studies. Students minoring in Women's Studies should check their choices of electives with the Director of Women's Studies, both when they are planning their minor and when they are reviewing it in preparation for graduation.

Examples of regularly taught courses in other departments that count as Women's Studies electives include, *but are not limited to:*

AFRS 2215 Black Families in the U.S.
ANTH 2090 Gender, Culture, and Communication
ANTH 2123 Women in Crosscultural Perspective
ANTH 4131 Culture, Pregnancy and Birth
CJUS 4000 Gender, Race, and Justice
COMM 2110 Women and the Media
COMM 3110 Gender and Communication
ENGL 4002 Women in and Literature
GRNT 4260 Women: Middle Age and Beyond
HIST 2150 U.S. Women's History to 1877
HIST 2151 U.S. Women's History Since 1877
HIST 2152 European Women's History
HIST 3000/AMST 3050 Southern Women's History
NURS 4191 Women's Health Issues
PHIL 3227 Feminist Philosophy
PSYC 3126 Psychology of Women

SOCY 2132 Marriage and Family
SOCY 2163 Sociology of Gender
SOCY 3261 Human Sexuality
SOCY 4090 New Theoretical Approaches to Gender
SOCY 4165 Sociology of Women
SPAN 3019 Hispanic Women Writers in English Translation

Courses approved for the minor that are taught infrequently:

AFRS 2201 Introduction to Human Relations
AFRS 4106/ENGL 4156 Gender in African-American Literature
ANTH 2090/AAAS 3050 Gender in a Transforming Africa
ARTS 3001 Women in Art
CJUS 4162 Seminar on Sexual Assault
ENGL 4050 Native American Women
ENGL 4050 Gender and Shakespeare
HIST 3131 History of Sexuality
HIST 3168 Women and Family in Modern East Asia
PHIL 3050 Philosophy of Sex
RELS 3050 Religion and Gender
RELS 3111 Women and Judaism
THEA 4001 Women's Writings Onscreen
THEA 4001 Violent Film Females

A complete list of courses approved for the minor in Women's Studies is available in the Women's Studies Program Office.

Graduate Courses. The Women's Studies Program regularly offers advanced graduate-level courses and a Graduate Certificate in Gender, Sexuality and Women's Studies for students wishing to include the study of women, gender, or feminism in their graduate work. These courses (and the graduate certificate they form the core of), enable graduate students to pursue their own research while they develop a substantial background in the field. Please see the *UNC Charlotte Graduate Catalog* for details.

Belk College of Business

www.belkcollege.uncc.edu

Dean: *Claude C. Lilly*
Associate Dean: *Vacant*
Associate Dean of Research: *Beth A. Rubin*
Associate Dean of International Programs: *Alan T. Shao*
Director of Graduate Studies: *Ronald A. Veith*
Director of Undergraduate Studies: *Daryl L. Kerr*

Mission and Objectives. The Belk College of Business serves the people of the Charlotte region and the State of North Carolina, as well as selected national and international communities. The College serves these constituents through the delivery of undergraduate and graduate programs in business administration and related interdisciplinary fields and through the development and dissemination of new knowledge. Through continuous improvement, the College seeks to maintain high standards in its programs and intellectual contributions. In carrying out its mission, the College is committed to maintaining diversity within the faculty and student body.

To accomplish its mission, the faculty of the College engages in three major activities: teaching, intellectual contributions, and public service. The College believes that scholarship informs teaching; therefore the College emphasizes both teaching and intellectual contributions. The College values the work of the faculty in the discovery of new knowledge through basic research and its practical applications. The College's commitment to excellence in teaching ensures that the scholarship of teaching through instructional development is recognized as an important form of intellectual contribution. Faculty engage in a third activity of public service through outreach programs, applied scholarship, and other activities that promote the economic health and the development of the Charlotte region.

In support of this mission, the College has the following strategic objectives:

- To provide and support undergraduate education through a broad range of programs in business administration that are excellent in quality, current in curricula, and relevant to business practice
- To provide and support graduate programs of distinction that serve the needs of the community, meet the demands of the student population, utilize the expertise of the faculty, and support the University mission
- To encourage and support the faculty in areas of basic research, applied research, instructional development and in their efforts to secure funding for intellectual contributions
- To develop and maintain research programs of distinction that support the economic competitiveness and the development of the greater Charlotte metropolitan region and state
- To meet the needs of the community for the continued development of leadership, management, and technical skills in business and other organizations through executive education and other outreach programs
- To develop and maintain lifelong partnerships with the alumni of the College.

Accreditation. All of the degree programs offered by the Belk College of Business are accredited by AACSB International, the Association to Advance Collegiate Schools of Business. AACSB International is the premier accrediting agency for bachelor's, master's, and doctoral degree programs in business administration and accounting. AACSB International is also the professional organization for management education.

GRADUATE PROGRAMS

Doctoral Program. The College offers one doctoral program. This program is designed to accommodate full-time students. *(See the UNC Charlotte Graduate Catalog for information about this program.)*

- Ph.D. in Business Administration (Major: Finance)

Master's Programs. The College offers four master's programs. These programs are designed to accommodate the needs of both full-time and part-time students. *(See the UNC Charlotte Graduate Catalog for information.)*

- Master of Accountancy (M.Acc.)
- Master of Business Administration (M.B.A.)
- Master of Science (M.S.) in Economics
- Master of Science (M.S.) in Mathematical Finance

Additional graduate programs are offered abroad in Taipei, Taiwan (Executive MBA); Monterrey, Mexico (MBA), Hong Kong, China (MBA); and Copenhagen, Denmark (M.S. in Economics with a concentration in Economics/Finance). Up-to-date information about each program is available at the Belk College website at www.belkcollege.uncc.edu.

UNDERGRADUATE PROGRAMS

Bachelor's Programs. The Belk College of Business offers the following bachelor's programs:

- *Bachelor of Science in Accounting.* This B.S. program offers assistance in academic preparation for the Certified Public Accountant (CPA) designation.
- *Bachelor of Science in Business Administration.* The B.S.B.A. degree encompasses a full range of academic disciplines within business administration. The degree provides breadth in the context and operation of the business enterprise through the business core curriculum and depth in a specialized area through the selection of a major. Majors are offered in:
  - Finance
  - Industrial & Operations Management
  - International Business
  - Management
  - Management Information Systems
  - Marketing
- *Bachelor of Science in Economics.* This B.S. program offers a Business Administration emphasis and a Liberal Arts emphasis.

Programs are designed so that transfer students from community colleges and other institutions may enter the program and complete their degree requirements in the last two years of their college work. Students planning to take their first two years in community colleges should inform their advisor or counselor of their intent to apply to UNC Charlotte so that their program may be tailored to facilitate transfer.

Minor Programs. The College offers three minors for students at UNC Charlotte. Students must have earned a minimum cumulative GPA of 2.5 in order to be accepted into one of these minor programs. Students must take all prerequisites for the courses required in the minor programs. These programs include:

- Economics
- Industrial and Operations Management
- Management Information Systems

Belk College Residency Requirements: In addition to meeting University residency requirements, all students seeking undergraduate degrees in the Belk College must complete at least 50% of the required business credit hours and 50% of the required credit hours in the upper-level major at UNC Charlotte. Additionally, at least half of the hours required for an undergraduate degree in the Belk College of Business must be taken outside of the College in order to have a well-rounded and balanced university education and experience.

Experiential Learning Opportunities. Students are encouraged to participate in professional work experiences that support academic and career development. The College is working with the University Career Center to expand experiential learning offerings to enable more students to graduate with career-related experience. The program consists of 49ership opportunities and Cooperative Education.

Cooperative Education involves professionally related, paid work experiences in multiple semesters. It does not offer academic credit, but it is noted on the student's transcript. To participate in this program, students must have a GPA of at least 2.5, meet specific departmental requirements, and pay a course registration fee. Approval for enrollment must be arranged before the student begins the work experience. Most students begin this program during their junior year. Transfer students must complete one semester at UNC Charlotte before making application for the program. Students maintain full-time student status during their co-op work semesters.

For further information, and to explore other credit and non-credit experiential learning opportunities including internships, contact the major Department Chairperson or the University Career Center.

49erships involve paid or unpaid work in a career-related position for professional experience. A minimum of 80 work hours for one semester is required to complete the program. Fall and Spring 49erships are part-time. Summer 49erships may be full or part-time. Full-time students who are in good

University standing, have completed their freshman year, and have a 2.0 minimum cumulative GPA are eligible. It does not offer academic credit, but it is noted on the student's transcript. Students do pay a course registration fee. Approval for enrollment must be arranged before the student begins the work experience. Students may begin this program during their sophomore year. Transfer students must complete one semester at UNC Charlotte before making application for the program. For more information, contact the University Career Center.

Service Learning Opportunities through the University Career Center. Service Learning opportunities include *49erships* in non-profit and government agencies and organizations, enabling students to gain career related and community service experience while learning about related social, civic, human service, and political issues. Students work a minimum of 80 hours per semester to complete the program. Fall and spring 49erships are part-time, and summer 49erships may be full or part-time. Students must qualify academically, and pay a registration fee for transcript notation. Employers (as well as career advisors) assist students in working toward learning objectives and will complete an evaluation on each student at the end of each term. Students receive transcript notation, but not academic credit.

Scholarships. There are several scholarships available for students in the Belk College of Business. Some of the scholarships are designated to recognize academic excellence in the junior and senior years. Further information can be obtained from the Financial Aid Office and the Belk College of Business Advising Center. Several scholarships are also designated for business students interested in studying in a foreign country. Additional information can be obtained from the International Programs Office in the Belk College of Business.

PRE-ACCOUNTING, PRE-BUSINESS, AND PRE-ECONOMICS

Students who apply to UNC Charlotte's Belk College of Business, and are accepted, are initially classified as follows. Students seeking the B.S. degree in Accounting are designated as Pre-Accounting (PACC) majors. Students seeking the B.S.B.A. degree with a major in Finance, Industrial and Operations Management, International Business, Management, Management Information Systems, or Marketing, are designated as Pre-Business (PBUS) majors. Students seeking the B.S. degree in Economics are designated as Pre-Economics (PECO) majors.

Progression Requirements. Pre-Accounting; Pre-Business; and Pre-Economics, with an emphasis in Business Administration, students seeking admission to the upper division majors must have met the following criteria:

(1) attained junior standing (60 hours or more)
(2) earned a minimum, overall GPA of at least 2.5 for all academic work
(3) completed the following Progression Courses: ACCT 2121 and 2122, ECON 2101 and 2102, MATH 1120, STAT 1220, and INFO 2130 with a minimum grade of C
(4) earned a minimum, overall GPA of at least 2.5 for these Progression Courses
(5) completed an approved "Program of Study" and "Change of Major Form" with their Academic Advisor in the Belk College of Business Advising Center

SUGGESTED CURRICULUM for PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS, Business Administration Emphasis, STUDENTS

(Freshman and Sophomore Years)

Freshman Year			
Fall		Spring	
Course	Credit	Course	Credit
ENGL 1101 English Composition	3	ENGL 1102 Writing in the Academic Comm.	3
MATH 1120 Calculus	3	STAT 1220 Elements of Statistics I	3
Natural Science with Lab	3	INFO 2130 Intro. to Business Computing	3
LBST 11XX Arts and Society *	3	LBST 2101 Western Culture	3
Non-Business Elective***	3	Non-Business Elective***	3

Sophomore Year			
Fall		Spring	
Course	Credit	Course	Credit
ACCT 2121 Principles of Accounting I	3	ACCT 2121 Principles of Accounting II	3
ECON 2101 Principles of Economics-Macro	3	ECON 2102 Principles of Economics-Micro	3
Natural Science	3	Writing Intensive Course (W)	3
LBST 2102 Global Understanding	3	LBST 22XX Ethical Issues**	3
Non-Business Elective***	3	Non-Business Elective***	3

*Select from LBST 1101, 1102, 1103, 1104 or 1105
* Select from LBST 2211, 2212, 2213, 2214, or 2215
***Non-Business Electives are courses offered outside the Belk College of Business

Pre-Economics students, with an emphasis in Liberal Arts, seeking admission to the upper division major must have met the following criteria:

(1) attained junior standing (60 hours or more)
(2) earned a minimum, overall GPA of at least 2.5 for all academic work
(3) completed the following Progression Courses: ENGL 1101 and 1102, ECON 2101 and 2102, MATH 1120, STAT 1220, and INFO 2130 with a minimum grade of C
(4) earned a minimum, overall GPA of at least 2.5 for these Progression Courses, and
(5) completed an approved "Program of Study" and "Change of Major Form" with their Academic Advisor in the Belk College of Business Advising Center.

SUGGESTED CURRICULUM for PRE-ECONOMICS, Liberal Arts Emphasis, STUDENTS

(Freshmen and Sophomore Years)

Freshman Year			
Fall		Spring	
Course	Credit	Course	Credit
ENGL 1101 English Composition	3	ENGL 1102 Writing in the Academic Comm.	3
MATH 1120 Calculus	3	STAT 1220 Elements of Statistics I	3
Natural Science with Lab	4	INFO 2130 Intro. to Business Computing	3
LBST 11XX Arts and Society *	3	LBST 2101 Western Culture	3
Non-Business Elective***	3	Non-Business Elective***	3

Sophomore Year			
Fall		Spring	
Course	Credit	Course	Credit
ECON 2101 Principles of Economics-Macro	3	ECON 2102 Principles of Economics-Micro	3
Natural Science	3	Writing Intensive Course (W)	3
LBST 2102	3	LBST 22XX	3
Global Understanding		Ethical Issues**	
Non-Business Elective***	3	Non-Business Elective***	3
Non-Business Elective***	3	Non-Business Elective***	3

*Select from LBST 1101, 1102, 1103, 1104 or 1105
**Select from LBST 2211, 2212, 2213, 2214, or 2215
***Non-Business Electives are courses offered outside the Belk College of Business.

Students may attempt each of the Progression Courses, listed in (3) above, a maximum of two times. Students who are not successful in earning the required, minimum 2.5 GPA overall or in the Progression Courses are ineligible for continuation in the Belk College of Business.

Pre-Accounting, Pre-Business, and Pre-Economics students who have met the Progression Requirements are permitted to enroll in junior-level business courses. If a student has not met the Progression Requirements prior to the start of the semester; his or her registration for any of these courses will be cancelled.

Course Level and Course Prerequisite Restrictions. The Belk College strongly enforces course level and course prerequisites. Upper-division business classes (3000 level) are restricted to students with junior or senior standing. Students must meet the prerequisites stated for courses in the College. Students enrolling in MGMT 3280, Business Policy, must have achieved senior level status and have completed all core classes. Pre-Accounting, Pre-Business, and Pre-Economics students may not enroll in MGMT 3280.

Catalog Policies. The Belk College reserves the right to impose new curriculum changes at any time. Students not admitted to the upper division majors are subject to any changes to major requirements regardless of general education catalog or matriculation term. Readmitted students are automatically considered under the new business requirements unless approved by academic petition to the Director of Undergraduate Studies.

BUSINESS HONORS PROGRAM

The Business Honors Program (BHP) provides students with access to a range of opportunities designed to stimulate their thinking and broaden their exposure to topics related to business issues.

Admission. Students majoring in the Belk College of Business must complete an *Application for Admission* to the Business Honors Program and conduct an interview with the Assistant Director or Director. Admission to the program is based on the student's demonstrated Honors potential (determined by examining GPA, SAT scores, courses completed, academic and other distinctions, and other factors), the personal interview, and availability of space in the

program. If the GPA of a student admitted to the program drops below that required for graduation for two successive semesters, the student will be dismissed from the program.

Courses. Students in the Business Honors Program must complete a minimum of 18 semester hours including BUSN 3780 and 3790, nine hours in business honors sections, and three hours from the University Honors Program. Once students are admitted to Business Honors they are required to complete all business honors sections offered unless they receive permission from the Assistant Director or Director of the Business Honors Program. Honors courses cannot be repeated.

Community Service, Events, and Other Extracurricular Activities. Students in the Business Honors Program are required to participate in a minimum of 50% of the community service, events, and other extracurricular activities offered by the Program during the academic year.

Certification Requirements. To graduate with "Honors in Business," a student must complete the required Honors courses, submit an application for Honors Candidacy at least two semesters prior to graduation, receive a grade of at least *A* in BUSN 3790, and present a GPA of at least 3.3 overall and 3.3 in all Honors courses for which a grade was assigned.

BUSINESS LEARNING COMMUNITY

The Business Learning Community (BLC) is a distinct approach to learning that inspires students to become active in their own educational experiences – to truly become a "community of learners". Students in the BLC interact closely with their peers, faculty and staff to create the ultimate college experience: the opportunity to take their learning beyond the classroom and apply it in a practical sense to the business world. Participants in this two-year program live on campus together, enroll in common courses, and fulfill business-related extracurricular activities. Freshman residency is completed in Charles F. Lynch Hall (formerly Cypress Hall) which is designed for learning community students.

Admission. Freshmen who are accepted into the Belk College of Business will be contacted by the Program Director if they are eligible for admission to the BLC. Admission to the program is based on the student's high school GPA, SAT scores, courses completed, other factors, and availability of space in the program.

Courses. Students in the BLC must complete nine specialized courses designed for learning community students. Once students are admitted to the Business Learning Community, they are required to complete all nine sections offered unless they receive permission from the Program Director.

Field Trips, Events, and Other Extracurricular Activities. Students in the Business Learning Community are required to participate in a minimum of 50% of the field trips, events, and other extracurricular activities offered by the Business Learning Community during each academic year.

Department of Accounting

www.belkcollege.uncc.edu

Chair and Big Five Distinguished Professor of Accounting: *C. Wiggins*
Professors: *L. H. Godfrey, R. Schroeder*
Professor Emeriti: *T. Turner*
Associate Professors: *S. Bhamornsiri, A. Blankley, H. Burton, J. Cathey, N. Elias, R. Guinn, D. S. Kerr, E. Malmgren*
Associate Professor Emeritus: *D. Hinson, S. Williamson*
Assistant Professors: *C. Blanthorne, C. M. Matherly, S. Sevin*
Lecturer: *E. Breen, J. Carlini, S. K. Yarbrough*

Mission. The mission of the Department of Accounting at the University of North Carolina at Charlotte is to be a leader in offering highly regarded graduate and undergraduate programs for students entering professional accounting, to produce academic publications at a competitive level, and to serve our important constituencies well.

Program Objectives. The program provides a learning environment in which students acquire conceptual and technical knowledge in the accounting and business areas as well as other essential capabilities for a successful career. The undergraduate accounting curriculum is designed to enable students to:

a) effectively develop, measure, analyze, validate, and communicate financial and other information
b) understand the concepts and methods of economics, finance, marketing, quantitative methods, management, and information systems
c) develop skills, competencies and learning capacities that are essential for a broad education

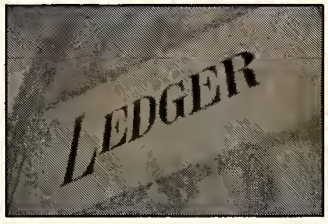
Program Outcomes. Graduates should have an excellent foundation for careers in business, accounting and professional accounting. A student who plans to become licensed as a certified public accountant in North Carolina must complete an additional 30 semester hours of academic study beyond the undergraduate accounting education. A student can meet this requirement by completing the Master of Accountancy Program.

Accreditation. The Accounting program is accredited by AACSB International, the Association to

Advance Collegiate Schools of Business. AACSB International is the premier accrediting agency for bachelor's, master's and doctoral degree programs in business administration and accounting. AACSB International is also the professional organization for management education.

MAJOR IN ACCOUNTING

To be accepted into the Accounting major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. The B.S. degree in Accounting requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: ACCT 3311, 3312, 3330, 3340, 3350, and 4220; BLAW 3150; FINN 3120; INFO 3130; MGMT 3140, 3160, and 3280; MKTG 3110; and OPER 3100. Students may attempt each of these 14 courses three times.



To obtain a B.S. in Accounting, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. A student must also have a 2.0 GPA in all required business and accounting courses with no more than one D left standing for these courses. When a student repeats a course, both the old grade and the new grade are included in the computation described in the preceding sentence.

A student must take at least 90 hours outside of Accounting and must take at least 48 hours outside the Belk College. At least 50% of the business credit hours required for an Accounting degree must be earned at The University of North Carolina at Charlotte. At least 50% of the required accounting courses at the 3000 level or higher must be completed at UNC Charlotte.

Internship. Because the Department of Accounting is committed to experiential learning, it allows for Accounting majors to use one internship for academic credit. Consent of the Department is required before starting the internship. A minimum of ACCT 3312 (Intermediate Financial Accounting II) with a *C* or better and an overall GPA of at least 2.0 are required. The student may not have a current or prior work history with the internship company.

SUGGESTED CURRICULUM for B.S. in ACCOUNTING

Junior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
ACCT 3311 Intermediate Financial Acctg. I	3	ACCT 3312 Intermediate Financial Acctg. II	3
ACCT 3340 Acctg. Info Systems	3	ACCT 3330 Managerial Cost Acctg	3
FINN 3120 Financial Mgmt	3	BLAW 3150 Business Law I	3
MGMT 3140 Mgmt & Org Behavior	3	MKTG 3110 Marketing Concepts	3
Non-Business Elective**	3	Non-Business Elective**	3

Senior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
ACCT 3350 Intro to Auditing	3	INFO 3130 Mgmt. Info Systems	3
ACCT 4220 Income Tax	3	MGMT 3280 Business Policy	3
MGMT 3160 Business Comm	3	General Elective*	3
OPER 3100 Operations Mgmt	3	General Elective*	3
Non-Business Elective**	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*

***Non-Business Electives are courses offered outside the Belk College of Business.*

Department of
Business Information Systems and Operations Management

www.belkcollege.uncc.edu

Chair and Professor: *M. Khouja*
Professors: *F. Barnes, W. D. Cooper, R. Kumar, S. Robbins, C. Saydam, A. Stylianou*
Assistant Professors: *M. Johar, Y. Lu, S. Park, C. Subramaniam, J. Zhou*
Visiting Professor: *G. Otto*
Lecturers: *H. Alchaar, Y. Niu, H. Setzler, B. Vergara*

The Business Information Systems and Operations Management (BISOM) Department offers majors in two dynamic disciplines - Management Information Systems (MIS) and Industrial and Operations Management (IOM). In addition, the department offers two minors; one in IOM and another in MIS. The focus of these programs is development of information technology and operations managers who can enhance the productivity of the firm in a knowledge-driven economy. Both majors offer students an integrated background in the functional areas of business and focus on enhancing problem-solving and critical-thinking skills using current technology.

A major in MIS involves the application of information technology and analytical skills to the solution of organizational problems and opportunities for innovation. MIS graduates are prepared for positions in the design, planning, development, implementation, and management of e-business information systems and systems support.

Who uses Management Information Systems? All businesses use MIS to make forecasts, manage day-to-day operations, schedule personnel and equipment, manage quality and inventory, work with suppliers, and undertake projects. In addition, management depends on information systems to collect and analyze data to make decisions. Data on customers, suppliers, competitors, and others are the main inputs to decision making at all levels of the organization. While all organizations have information systems needs, some industries have much greater reliance on them. These include banking, insurance, large-scale retailing, and communications.

Skills for Management Information Systems majors include:

- Analytical problem solving
- Communication skills
- Organizational skills
- Computer skills

A major in IOM focuses on the efficient use of resources to provide quality goods and services. IOM enables students to pursue such careers in supply chain management, production planning, project management, quality assurance, and operations. Environments in which IOM graduates are in high demand include health care, government, manufacturing, and service industries.

Who uses Industrial & Operations Management? All businesses, including for profit and not-for-profit, manufacturing and services, use IOM. These businesses have to make forecasts, manage day-to-day operations, schedule personnel and equipment, manage quality and inventory, work with suppliers, and undertake projects. While IOM has always been important in manufacturing, service organizations are discovering the importance of being able to effectively and efficiently manage operations. Financial services and health care industries have been on the leading edge in using IOM to improve operations. Company expenditures on programs such as Six Sigma, total quality management, and operational risk management, are in the billions of dollars.

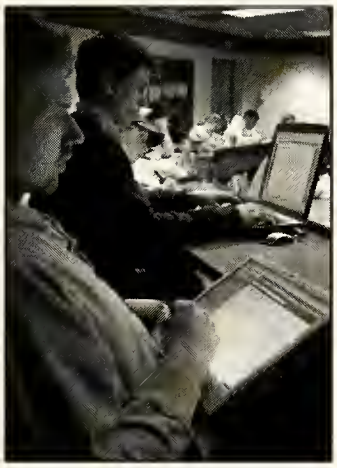
Skills for Industrial & Operations Management majors include:

- Analytical problem solving
- Communication skills
- Organizational skills
- Computer skills
- Attention to detail

MAJOR IN INDUSTRIAL & OPERATIONS MANAGEMENT

The primary objective of the Industrial & Operations Management (IOM) major is to provide an understanding of technical and systematic approaches to designing production/operations systems and solving business problems. Emphasis is on the tools of the field.

To be accepted into the Industrial & Operations Management major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: BLAW 3150; ECON 3125; FINN 3120; INFO 3130; MGMT 3140, 3160, and 3280; MKTG 3110; OPER 3100, 3201, 3203, 3204, 3206; and one IOM elective (see list below). Students may attempt each of these 14 courses three times.



To obtain a B.S.B.A. in Industrial & Operations Management, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. A student must also have a 2.0 GPA in all required business courses with no more than one D left standing for these courses. When a student repeats a course, both the old grade and the new grade are included in the computation described in the preceding sentence.

SUGGESTED CURRICULUM for B.S.B.A. in INDUSTRIAL & OPERATIONS MANAGEMENT

Junior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
ECON 3125 Managerial Economics	3	OPER 3203 Management Science	3
MGMT 3140 Mgmt. & Org. Behavior	3	OPER 3204 Mgmt. of Svc Operations	3
MGMT 3160 Business Comm	3	FINN 3120 Financial Mgmt	3
OPER 3100 Operations Mgmt	3	MKTG 3110 Marketing Concepts	3
Non-Business Elective**	3	Non-Business Elective**	3

Senior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
OPER 3201 Adv Operations Mgmt.	3	IOM Elective***	3
OPER 3206 Managing for Quality	3	INFO 3130 Mgmt Info Systems	3
BLAW 3150 Business Law I	3	MGMT 3280 Business Policy	3
General Elective*	3	General Elective*	3
General Elective*	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*

***Non-Business Electives are courses offered outside the Belk College of Business.*

******IOM Elective (Select one of the following courses):***

ENGR 3670 Total Quality Systems
ETIN 3133 Quality Control
INFO 3229 Business Data Communications
INFO 3231 Business Applications Development
INFO 3233 Business Database Systems
INFO 3234 Business Information Systems Development
INFO 3236 Business Decision Support Systems
MKTG 3217 Transportation and Logistics Marketing
OPER 3000 Topics in Operations Management
OPER 3208 Supply Chain Management
OPER 3800 Directed Study

MINOR IN INDUSTRIAL & OPERATIONS MANAGEMENT

The minor in Industrial and Operations Management (IOM) is designed to provide business and non-business students who have an interest in supply chain management, manufacturing, and service operations with a broad foundation of IOM concepts and analytical methodology to be integrated into their major field of study.

The demand for graduates who are knowledgeable about designing, planning, evaluation, and management of supply chains, production and service systems continues to increase. However, there is also increase in the demand of IOM professionals who can define strategic and operational problems, collect relevant data efficiently, and apply advanced analytical techniques to improve the performance of firms. IOM courses deal with supply chains, service systems and manufacturing organizations. These areas examine the production function of an organization at a strategic level as well as the plant and shop floor level. Areas included in the IOM program include operations strategy, process analysis, product design, quality management, logistics management, procurement, supply chain management, project management, and waiting line management as well as analytical techniques such as optimization and simulation.

The minor will offer graduates a competitive advantage in terms of the types of positions for which they qualify. The minor in IOM is directed not only at UNC Charlotte students majoring in business but also those majoring in other Colleges. The benefits of a minor in IOM include increased marketability in the public and private sector and the ability to leverage one's major discipline with a solid understanding of one business area, increased analytical thinking, problem solving ability, and an understanding of internal and external environments of service and business organizations.

IOM Minor Requirements. Students seeking IOM minor must have met the following criteria:

(1) attained junior standing (60 hours or more)
(2) earned a minimum, overall GPA of at least 2.5 for all academic work
(3) completed the following Progression Courses: ACCT 2121 and 2122, ECON 2101 and 2102, MATH 1120, STAT 1220, and INFO 2130 with a minimum grade of C
(4) earned a minimum, overall GPA of at least 2.5 for these Progression Courses
(5) completed an approved "Program of Study" and "Change of Major/Minor Form" with their Academic Advisor in the Belk College of Business Advising Center

A minor in Industrial and Operations Management requires a minimum 12 semester hours (four courses) for students who have taken the business prerequisites listed below. Not more than one grade of *D* will count toward the specified hours for a minor in IOM. The second and any subsequent grade(s) in a repeated course(s) will be included in all GPA calculations. Note: All Computer Science and Software and Information Systems majors will be exempted from INFO 2130. Other students with sufficient background can apply for credit by exam or exemption for INFO 2130.

Prerequisites:

ACCT 2121, 2122
ECON 2101, 2102
MATH 1120
STAT 1220
INFO 2130

Required Courses:
OPER 3100 Operations Management
OPER 3203 Management Science

Select Two Electives:
INFO 3236 Decision Support Systems
OPER 3201 Advanced Operations Management
OPER 3204 Management of Service Operations
OPER 3208 Supply Chain Management

MAJOR IN MANAGEMENT INFORMATION SYSTEMS

The primary objective of the Management Information Systems (MIS) major is to prepare students for careers in the information systems function of organizations. The curriculum is designed to provide both technological and managerial knowledge relevant to the development and use of computer-based information systems.

To be accepted into the Management Information Systems major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: INFO/ITCS 2231; BLAW 3150; ECON 3125; FINN 3120; INFO 3130, 3229, 3231, 3233, 3234, 3235 or 3240, and two MIS electives (see list below); MGMT 3140, 3160, and 3280; MKTG 3110; and OPER 3100. Students may attempt each of these 17courses three times.

To obtain a B.S.B.A. in Management Information Systems, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. A student must also have a 2.0 GPA in all required business courses with no more than one D left standing for these courses. When a student repeats a course, both the old grade and the new grade are included in the computation described in the preceding sentence.

SUGGESTED CURRICULUM for B.S.B.A. in MANAGEMENT INFORMATION SYSTEMS

Junior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
INFO/ITCS 2231 Intro. to Bus. Programming	3	INFO 3231 Bus. Application Development	3
ECON 3125 Managerial Economics	3	INFO 3233 Business Database Systems	3
MGMT 3140 Mgmt. & Org. Behavior	3	FINN 3120 Financial Mgmt	3
OPER 3100 Operations Mgmt	3	MKTG 3110 Marketing Concepts	3
Non-Business Elective**	3	Non-Business Elective**	3

Senior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
INFO 3229 Business Data Comm	3	INFO 3235 or 3240	3
INFO 3234 Bus. Info. Systems Development	3	MIS Elective***	3
BLAW 3150 Business Law I	3	MIS Elective***	3
INFO 3130 Mgmt Information Systems	3	MGMT 3280 Business Policy	3
MGMT 3160 Business Comm	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*
***Non-Business Electives are courses offered outside the Belk College of Business.*
******MIS Electives (Select two of the following courses):***
ACCT 3340 Accounting Information Systems
INFO 3000 Special Topics in Management Information Systems
INFO 3232 International Information Systems Management
INFO 3236 Business Decision Support Systems
INFO 3238 Current Issues in the Mgmt of Information Systems
INFO 3800 Directed Study in Management Information Systems
ITCS 2112 Advanced Structured COBOL
ITCS 3112 Design and Implementation of Object-Oriented Systems
ITCS 3155 Software Engineering
ITCS 3160 Database Design and Implementation
OPER 3203 Management Science
OPER 3204 Management of Service and Project Operations
OPER 3206 Managing for Quality

MINOR IN MANAGEMENT INFORMATION SYSTEMS

The minor in Management Information Systems is designed to provide students who have an interest in business information systems with a broad foundation for integrating information technology techniques and concepts into their major field of study in business. The demand for business graduates who are knowledgeable about designing, planning, developing,

managing, and evaluating of information systems continues to increase as the economy moves from a manufacturing to an information base. The demand for MIS professionals has increased dramatically during the past ten years and the trend is expected to continue. However, there is also an increase in the demand for management information systems professionals who have an in-depth understanding of the application domain and who can apply MIS concepts in contexts which are more specific to their major. Thus, professionals with a primary interest and expertise in marketing, health care, banking, finance, accounting, and management are being sought by business application-area specialists such as EDS, PriceWaterhouseCoopers, and Sprint. These firms are in the forefront of a trend in the information industry to employ qualified graduates of business programs who are knowledgeable about their primary field of study but are also conversant in computer technology.

The focus of the minor in MIS is to impart a framework for understanding MIS and for utilizing its tools to the student's major. The minor will offer graduates a competitive advantage in terms of the types of positions for which they qualify. Graduates of the program will be able to act as technical liaisons between MIS professionals and their "home" departments, as sales specialists for specialized software/applications systems, and as technical representatives.

The minor in MIS is directed not only at UNC Charlotte students majoring in business but also those majoring in other Colleges. The benefits of a minor in MIS include increased marketability in information-dependent firms in the public and private sector and the ability to leverage one's major discipline with state-of-the-art computing knowledge. A key benefit of taking MIS classes is that students learn to effectively use technology in business settings.

MIS Minor Requirements. Students seeking a minor in Management Information Systems must have met the following criteria:

(1) attained junior standing (60 hours or more)
(2) earned a minimum, overall GPA of at least 2.5 for all academic work
(3) completed the following Progression Courses: ACCT 2121 and 2122, ECON 2101 and 2102, MATH 1120, STAT 1220, and INFO 2130 with a minimum grade of C
(4) earned a minimum, overall GPA of at least 2.5 for these Progression Courses
(5) completed an approved "Program of Study" and "Change of Major/Minor Form" with their Academic Advisor in the Belk College of Business Advising Center

A minor in Management Information Systems requires a minimum 15 semester hours (five courses) for students who have taken the business prerequisites listed below. Not more than one grade of *D* will count toward the specified hours for a minor in MIS. The second and any subsequent grade(s) in a repeated course(s) will be included in all GPA calculations. Note: All Computer Science and Software and Information Systems majors will be exempted from INFO 2130. Other students with sufficient background can apply for credit by exam or exemption for INFO 2130.

Prerequisites:
ACCT 2121, 2122
ECON 2101, 2102
MATH 1120
STAT 1220
INFO 2130

Required Courses:
INFO 2130 Intro to Business Computing
ITCS/INFO 2231 Intro to Business Programming
INFO 3231 Business Application Development
INFO 3233 Business Database Systems

Select One Elective:
ACCT 3340 Accounting Information Systems
INFO 3229 Business Data Communications
INFO 3000 Special Topics in Mgmt InfoSystems
INFO 3234 Business Info Systems Development
INFO 3235 Adv Business Info Systems Development
INFO 3236 Decision Support Systems
INFO 3238 Current Issues in the Mgmt of InfoSystems
INFO 3240 Fundamentals of eBusiness

Department of Economics

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Chair and Professor: *R. Zuber*
Professor Emeriti: *R. Neel, W. Wubben*
Professors: *L. T. Amato, J. Connaughton, W. Y. Davis, J. Gandar, G. Liner, R. Madsen, R. R. McGregor, P. Schwarz*
Associate Professor Emeritus: *E. Rogers*
Associate Professors: *H-C. Lin, B. Russo, J. Troyer, H-K. Tseng, I. Tucker*
Assistant Professors: *S. Radchenko, E. Sewell, D. Shapiro, A. Zillante*
Lecturer: *C. Stivender*
Clinical Professor: *C. Swartz*

The study of Economics offers students a problem-solving discipline to foster their intellectual and career development. It provides students with a balanced and broad educational background and prepares them to choose from a wide range of career alternatives.

The Economics program explores the economic decisions of individuals, businesses, governments, and other institutions. It examines the nature of economic activity, why it takes place, and how it affects everyone's lives. The program includes elective courses that enable students to tailor their educational program to meet personal needs and interests. The study of economics also helps students develop a way of

thinking that is logical and rigorous. It provides decision-making tools that they can apply to personal as well as business decisions and use to address the many economic decisions they will face in the future.

The Department of Economics offers two programs leading to the Bachelor of Science degree. Students who plan to pursue careers in business-related fields such as banking, finance, and international commerce, or who plan to enter an MBA program, are encouraged to elect the Business Administration Emphasis program. Students planning to pursue a career in education, enter graduate school in economics, or attend law school are encouraged to pursue the program with the Liberal Arts Emphasis.

MAJOR IN ECONOMICS with BUSINESS ADMINISTRATION EMPHASIS

To be accepted into Economics major with the Business Administration Emphasis and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: ECON 3112, 3122, 3123, 3125, and 4180; FINN 3120; MGMT 3160; two Business Core courses; and four Economics - Business Administration Emphasis electives. Students may attempt each of these 13 courses three times.

To obtain a B.S. in Economics, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. A student must also have a 2.0 GPA in all required business and economics courses with no more than one D left standing for these courses. When a student repeats a course, both the old grade and the new grade are included in the computation described in the preceding sentence.

SUGGESTED CURRICULUM for B.S. in ECONOMICS - Business Administration Emphasis

Junior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
ECON 3112 Econometrics	3	ECON 3123 Intermediate Macroeconomics	3
ECON 3122 Intermediate Microeconomics	3	FINN 3120 Financial Mgmt	3
Business Core Course***	3	MGMT 3160 Business Comm	3
Business Core Course***	3	Non-Business Elective**	3
Non-Business Elective**	3	General Elective*	3

Senior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
ECON 3125 Managerial Economics	3	ECON 4180 Industrial Org. & Public Policy	3
Bus. Admin. Elective****	3	Bus. Admin. Elective****	3
Bus. Admin. Elective****	3	Bus. Admin. Elective****	3
General Elective*	3	General Elective*	3
General Elective*	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*

***Non-Business Electives are courses offered outside the Belk College of Business.*

******Business Core Courses (Select <u>two</u> of the following):***
BLAW 3150 Business Law I
INFO 3130 Management Information Systems
MGMT 3140 Management and Organizational Behavior
MKTG 3110 Marketing Concepts
OPER 3100 Operations Management

*******Economics - Business Administration Emphasis Electives (Select <u>four</u> of the following):***
ECON 3105 Industrial Relations
ECON 3115 Money and Banking
ECON 3141 Health Economics
ECON 3151 Law and Economics
ECON 3171 International Economics
ECON 4100 Mathematical Economics
ECON 4116 Public Finance
ECON 4117 Business/Economic Forecasting
ECON 4135 Economics of Development
ECON 4172 Economics of International Finance
ECON 4177 History of Economic Thought (W)

MAJOR IN ECONOMICS with LIBERAL ARTS EMPHASIS

To be accepted into Economics major with the Liberal Arts Emphasis and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ECONOMICS - LIBERAL ARTS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section, the following courses are required: ECON 3112, 3122, 3123, 4177; MGMT 3160; four Economics electives,

and 15-21 hours of a Liberal Arts Minor. Students must select a minor in one of the following disciplines: Actuarial Mathematics, Africana Studies, American Studies, Anthropology, Criminal Justice, Earth Science, Geography, Gerontology, Health Sciences, History, International Studies, Mathematics, Philosophy, Political Science, Psychology, Social Work, Sociology, Urban Studies, Women's Studies. Students may choose a minor not listed above with the approval of the Chair of the Department of Economics. Students may attempt each of these nine courses, and the minor courses, three times.

To obtain a B.S. in Economics, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. A student must also have a 2.0 GPA in all required business and economics courses with no more than one D left standing for these courses. When a student repeats a course, both the old grade and the new grade are included in the computation described in the preceding sentence.

SUGGESTED CURRICULUM for B.S. in ECONOMICS – Liberal Arts Emphasis

Junior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
ECON 3112 Econometrics	3	ECON 3123 Intermediate Macroeconomics	3
ECON 3122 Intermediate Microeconomics	3	Economics Elective****	3
Liberal Arts Minor ***	3	MGMT 3160 Business Communications	3
Liberal Arts Minor***	3	Liberal Arts Minor***	3
Liberal Arts Minor ***	3	Liberal Arts Minor ***	3

Senior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
Economics Elective **	3	ECON 4177 History of Economic Thought	3
Economics Elective****	3	Economics Elective****	3
Liberal Arts Minor ***	3	General Elective*	3
Liberal Arts Minor ***	3	General Elective*	3
General Elective*	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*
***Non-Business Electives are courses offered outside the Belk College of Business.*

******Liberal Arts Minor (Select one minor program):***

- *Actuarial Mathematics*
- *Africana Studies*
- *American Studies*
- *Anthropology*
- *Criminal Justice*
- *Earth Science*
- *Geography*
- *Gerontology*
- *Health Sciences*
- *History*
- *International Studies*
- *Mathematics*
- *Philosophy*
- *Political Science*
- *Psychology*
- *Social Work*
- *Sociology*
- *Urban Studies*
- *Women's Studies*

For details about each minor program, please refer to their individual description and requirements in this Catalog.

*******Economics - Liberal Arts Emphasis Electives (Select four of the following):***

ECON 3105 Industrial Relations
ECON 3115 Money and Banking
ECON 3141 Health Economics
ECON 3151 Law and Economics
ECON 3171 International Economics
ECON 4100 Mathematical Economics
ECON 4116 Public Finance
ECON 4117 Business/Economic Forecasting
ECON 4135 Economics of Development
ECON 4172 Economics of International Finance
ECON 4180 Industrial Organization & Public Policy

All majors in Economics must complete MGMT 3160 (Business Communications) prior to registering for any 4000 level Economics course. Students transferring into the Economics program as a senior must complete MGMT 3160 their first semester in the program.

It is recommended that students who plan graduate work in economics complete MATH 1241, ECON 4100, and, as available, ECON 4112 and 4117. Also, they should consider additional work in mathematics but should consult with their advisors concerning specific courses.

MINOR IN ECONOMICS

Economics Minor Requirements. Students seeking a minor in Economics must have met the following criteria:

(1) attained junior standing (60 hours or more)
(2) earned a minimum, overall GPA of at least 2.5 for all academic work
(3) completed the following Progression Courses: ACCT 2121 and 2122 or ENGL 1101 or 1102; ECON 2101 and 2102; MATH 1120; STAT 1220; and INFO 2130 with a minimum grade of C
(4) earned a minimum, overall GPA of at least 2.5 for these Progression Courses
(5) completed an approved "Program of Study" and "Change of Major/Minor Form" with their

Academic Advisor in the Belk College of Business Advising Center

A minor in Economics requires: 18 semester hours of economics to include ECON 2101, 2102 and either 3125 or 3122, and at least nine additional hours at the 3000 or 4000 level. A GPA of at least 2.0 is required in the 18 hours.

In computing the GPA in the minor all required courses are included. Not more than one grade of *D* will count toward the specified hours for a minor in Economics. The second and any subsequent grade(s) in a repeated course(s) will be included in all GPA calculations.

Business Prerequisites:
ACCT 2121, 2122 or ENGL 1101, 1102
ECON 2101, 2102
MATH 1120
STAT 1220
INFO 2130

Required Courses:
ECON 2101 Principles of Economics – Macro
ECON 2102 Principles of Economics – Micro

Select One:
ECON 3122 Microeconomic Analysis
ECON 3125 Managerial Economics

Select Three Electives:
ECON 3105 Industrial Relations
ECON 3112 Econometrics
ECON 3115 Money and Banking
ECON 3141 Health Economics
ECON 3151 Law and Economics
ECON 3171 International Economics
ECON 4100 Mathematical Economics
ECON 4116 Public Finance
ECON 4117 Business/Economic Forecasting
ECON 4135 Economics of Development
ECON 4172 Economics of International Finance
ECON 4177 History of Economic Thought (W)
ECON 4180 Industrial Org & Public Policy

Department of Finance & Business Law

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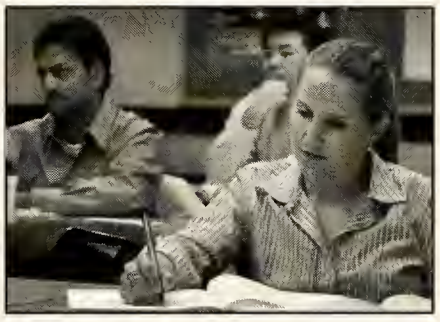
Chair and The Torrence E. Hemby Sr. Distinguished Professor in Banking: *C. Sealey*
Dean and The James J. Harris Professor of Risk Management and Insurance: *C. Lilly*
The John Crosland Sr. Endowed Professorship in Real Estate and Development: *S. Ott*
Professors: *L. Blenman, B. Nunnally, L. Trosch*
Associate Professors: *R. Buttimer, T-H D. King, D. A. Plath*
Assistant Professors: *S. Clark, F. Neale, M. Pinheiro, J. Russell*
Lecturers: *N. Bradick, T. Marshall*

The Department of Finance and Business Law prepares students for financial leadership within organizations and provides them with an understanding of the legal environment in which these organizations operate. In the Department's various programs, students acquire knowledge that enables them to understand:

a) the concepts, processes and institutions involved in planning for, acquiring and allocating capital with respect to modern business organizations
b) the economic and legal environment of organizations, and the myriad social and political influences on business
c) the concepts and methods of economics, accounting, mathematics, management, information systems, and business law

The Department of Finance and Business Law offers two programs leading to the Bachelor of Science in Business Administration degree. Students who plan to pursue careers in business-related fields such as banking, finance, and international commerce, or who plan to enter an MBA program, are encouraged to elect the Finance concentration. Students planning to pursue a career in risk management and insurance are encouraged to pursue the program with the Risk Management & Insurance concentration.



MAJOR IN FINANCE with a FINANCE CONCENTRATION

To be accepted into Finance major with a Finance Concentration and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: BLAW 3150; ECON 3125; FINN 3120, 3220, 3222, 3226, three Finance electives; INFO 3130; MGMT 3140, 3160, 3280; MKTG 3110; and OPER 3100. Students may attempt each of the nine courses listed above three times.

SUGGESTED CURRICULUM for B.S.B.A. in FINANCE – Finance Concentration

Junior Year			
Fall		Spring	
Course	Credit	Course	Credit
BLAW 3150 Business Law I	3	FINN 3220 Financial Analysis	3
ECON 3125 Managerial Economics	3	MGMT 3140 Mgmt. & Org Behavior	3
FINN 3120 Financial Management	3	MKTG 3110 Mktg Concepts	3
Non-Business Elective**	3	OPER 3100 Operations Mgmt	3
Non-Business Elective**	3	General Elective*	3

Senior Year			
Fall		Spring	
Course	Credit	Course	Credit
FINN 3222 Investments	3	FINN 3226 Financial Theory & Practice	3
Finance Elective***	3	Finance Elective****	3
Finance Elective***	3	INFO 3130 Mgmt. Information Systems	3
MGMT 3160 Business Communications	3	MGMT 3280 Business Policy	3
General Elective*	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*
***Non-Business Electives are courses offered outside the Belk College of Business.*
******Finance Elective - select two to three of the following courses:***
BLAW 3250 Business Law II
FINN 3221 Financial Institutions and Markets
FINN 3223 International Financial Management
FINN 3224 Applied Business Finance
FINN 3225 Commercial Bank Management

Select one of the following courses if you only selected two from the list above:
ACCT 3311 Intermediate Financial Accounting I
ECON 3112 Econometrics
ECON 3115 Money and Banking
FINN 3261 Real Estate Finance
FINN 3271 Principles of Risk Management and Insurance
FINN 3272 Life Insurance & Professional Financial Planning
FINN 3800 Directed Study (Chair approval required)
FINN 4159 Student Managed Investment Fund II
OPER 3204 Management of Service Operations

MAJOR IN FINANCE with a RISK MANAGEMENT & INSURANCE CONCENTRATION

To be accepted into Finance major with a Risk Management and Insurance Concentration and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: BLAW 3150; ECON 3125; Students may attempt each of the nine courses listed above three times.

In addition to the General Education requirements of the University and the Progression requirements of the Belk College of Business (as previously stated under the Pre-Accounting, Pre-Business, and Pre-Economics heading), the following courses are required for a B.S.B.A. degree in Finance with a concentration in Finance: BLAW 3150; ECON 3125; FINN 3120, 3271, 3272, 3273, 3275, one Finance (Risk Management) elective; INFO 3130; MGMT 3140, 3160, 3280; MKTG 3110; and OPER 3100.

SUGGESTED CURRICULUM for B.S.B.A. in FINANCE – Risk Management & Insurance Concentration

Junior Year			
Fall		Spring	
Course	Credit	Course	Credit
BLAW 3150 Business Law I	3	Finance/Risk Mgmt Elective***	3
ECON 3125 Managerial Economics	3	MGMT 3140 Mgmt & Org Behavior	3
FINN 3120 Financial Management	3	MKTG 3110 Marketing Concepts	3
FINN 3271 Prin. of Risk Mgmt & Insur.	3	OPER 3100 Operations Management	3
Non-Business Elective**	3	General Elective*	3

Senior Year			
Fall		Spring	
Course	Credit	Course	Cred
FINN 3272 Life Insurance & Prof Financial Planning	3	FINN 3275 Advanced Risk Mgmt & Ins	3
FINN 3273 Property & Casualty	3	INFO 3130 Mgmt Info Systems	3
MGMT 3160 Business Communications	3	MGMT 3280 Business Policy	3

General Elective*	3	General Elective*	3
General Elective*	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*
***Non-Business Electives are courses offered outside the Belk College of Business.*
******Finance (Risk Mgmt) Elective (Select one of the following courses):***
FINN 3222 Investments
FINN 3276 Employee Benefits
FINN 3277 Legal Aspects of Insurance
FINN 3800 Directed Study (Chair approval required)
MGMT 3273 New Venture Creation
MKTG 3213 Personal Selling & Sales Management

International Business Program

www.belkcollege.uncc.edu

Associate Dean: *Dr. Alan T. Shao*
Director: *Ms. Cindy Fox*

The primary objective of the International Business major is to provide an understanding of the importance of a global perspective son the part of business managers. The major provides an integrated framework for the study of the market environment in which international business firms operate and the impact of those environments upon managerial decision making. Possible careers may result in a variety of business and government sectors—either domestically or abroad.

MAJOR IN INTERNATIONAL BUSINESS

To be accepted into International Business major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: BLAW 3150; ECON 3125, 3171; FINN 3120, 3223; INFO 3130; MGMT 3140, 3160, 3274, 3275, 3280; MKTG 3110, 3215; and OPER 3100. Students may attempt each of these 14 courses three times.

To obtain a B.S.B.A. in International Business, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. A student must also have a 2.0 GPA in all required business courses with no more than one D left standing for these courses. When a student repeats a course, both the old grade and the new grade are included in the computation described in the preceding sentence.

Required Courses
ECON 3171 International Business Economics
MGMT 3274 Int'l Business Processes and Problems
MKTG 3215 International Marketing Management
FINN 3223 International Financial Management
MGMT 3275 International Management

International Business Electives (Select one)
AFRS 3265 African Economic Development
ACCT 3150 International Accounting
ANTH 4120 Intercultural Communications
BLAW 3253 International Business Transactions
GEOG 3105 Geography of the Global Economy
IBUS 3400 International Business Internship***
POLS 3050 Business and Politics in the European Union
POLS 3151 International Political Economy
POLS 3152 International Organizations
POLS 3153 European Union
POLS 3167 U.S. and Japan
SPAN 3029 Cultural Dimension of Doing Business in Spanish-Speaking Countries
Other courses may approved by the Director of the International Business Program

****The internship requirement may be satisfied by working at least 150 hours at a company or other organization involved in international business. The work program and the company/association must be pre-approved by the Director of the International Business Program. At least 80% of the student's work must be international in nature. While the internship experience is not required to be performed outside the U.S., it is strongly encouraged.*

Attain competency in a second language. This can be fulfilled two ways:

1.) Complete at least six semesters of course work in a foreign language. Students must take at least four courses above the elementary level, including two courses at the advanced level (3000 level or above). It is recommended that 2201, 2210 (or 2202 if 2210 is not offered), 3201, and 3202—or their course equivalents—be taken.

2.) Demonstrate proficiency in a foreign language at the 3202 level through a test administered by the Department of Languages and Culture Studies. Students are strongly encouraged to enhance their language skills by earning either a Certificate in Business Language (CBL) or a minor in their language of study. Those who do will have this extra effort recognized by the designation of "Language Intensive Option in Spanish" (or French, German, Japanese, etc.) on their final transcript.

Study Abroad (3 hours). This requirement may be satisfied by participating in an approved Study Abroad program outside of the U.S. and Canada during the Fall, Spring, or Summer semester for a minimum period of three weeks, while completing at least three credit hours of coursework.

SUGGESTED CURRICULUM for B.S.B.A. in INTERNATIONAL BUSINESS

Junior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
ECON 3125 Managerial Economics	3	FINN 3223 Intl. Financial Mgmt	3
ECON 3171 Intl. Business Economics	3	MGMT 3140 Mgmt. & Org Behavior	3
FINN 3120 Financial Management	3	MKTG 3110 Marketing Concepts	3
MGMT 3160 Business Comm	3	OPER 3100 Operations Mgmt	3
Non-Business Elective** (or language requirement)	3	General Elective* (or language requirement)	3

Senior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
MGMT 3274 Intl. Bus. Processes & Prob	3	MGMT 3275 International Management	3
MKTG 3215 Global Mktg Mgmt	3	Intl. Business Elective (see below)	3
BLAW 3150 Business Law I	3	Study Abroad (see below)	3
INFO 3130 Mgmt. Information Systems	3	MGMT 3280 Business Policy	3
General Elective* (or language requirement)	3	General Elective* (or language requirement)	3

**General Electives are courses offered outside or inside the Belk College of Business.*
***Non-Business Electives are courses offered outside the Belk College of Business.*

Department of Management

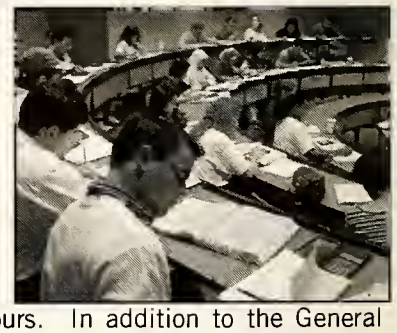
www.belkcollege.uncc.edu

Chair: *P. Davis*
Professors: *G. Kohut, B. Rubin*
Associate Professors: *J. Beggs, R. Booth, R. Conboy, I. E. Jernigan, S. D. Pugh*
Assistant Professors: *F. Fabian, C. Henle, J. Nebus, K. Zellars*
Lecturers: *M. Dixon-Brown, C. Kane, T. Sgritta*

A program of study in the Department of Management leads to a Bachelor of Science in Business Administration (B.S.B.A.) degree with a major in Management. This major is designed to teach students to plan, organize, direct, and control business activities in both the public and private sectors. Students develop skills in decision making, leadership, motivation, problem solving and teamwork.

Courses in this major deal with the following topics: management and organizational behavior, ethics, decision-making techniques, and communication skills that make for effective leadership. The objectives of the major are to develop each student with the conceptual tools that support the exercise of leadership in a variety of organizations.

MAJOR IN MANAGEMENT



To be accepted into the Management major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: BLAW 3150; ECON 3125; FINN 3120; INFO 3130; MGMT 3140, 3160, 3241, 3287, 3280, four MGMT electives; MKTG 3110; and OPER 3100. Students may attempt each of these 15 courses three times.

To obtain a B.S.B.A. in Management, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. A student must also have a 2.0 GPA in all required

business courses with no more than one D left standing for these courses. When a student repeats a course, both the old grade and the new grade are included in the computation described in the preceding sentence.

SUGGESTED CURRICULUM for B.S.B.A. in MANAGEMENT

Junior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
MGMT 3140 Mgmt. & Org Behavior	3	MGMT 3241 HR Mgmt***	3
MGMT 3160 Business Comm	3	Management Elective****	3
MKTG 3110 Marketing Concepts	3	ECON 3125 Managerial Economics	3
OPER 3100 Operations Mgmt	3	BLAW 3150 Business Law I	3
Non-Business Elective**	3	Non-Business Elective**	3

Senior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
FINN 3120 Financial Management	3	MGMT 3287 Managerial Leadership***	3
INFO 3130 Mgmt. Info. Systems	3	MGMT 3280 Business Policy	3
Management Elective****	3	Management Elective****	3
Management Elective****	3	General Elective*	3
General Elective*	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*
***Non-Business Electives are courses offered outside the Belk College of Business.*
******Required Courses:***
MGMT 3241 Human Resource Management
MGMT 3287 Managerial Leadership
*******Select four of the following Management Electives:***
MGMT 3243 Employment Law
MGMT 3260 Managerial Communication
MGMT 3274 International Business Processes and Problems
MGMT 3275 International Management
MGMT 3277 Entrepreneurship
MGMT 3282 Managerial Ethics

Department of Marketing

www.belkcollege.uncc.edu

Chair and Professor: *L. Swayne*
North Carolina Ports Professor of Marketing: *A. Shao*
Cullen Professor of Marketing: *T. Stevenson*
Professors: *C. Amato, F. Campbell,*
Associate Professors: *C. Bodkin, S. Erevelles*
Assistant Professors: *R. Roundtree*
Lecturer: *D. Lanham*

A program of study in the Department of Marketing leads to a Bachelor of Science in Business Administration (B.S.B.A.) degree with a major in Marketing. This major offers a curriculum suitable for students who are (1) planning to operate their own businesses and want to know how to utilize marketing, (2) preparing for positions in small to large organizations where specialized skills in marketing are required, and (3) seeking a strong background at the undergraduate level prior to undertaking graduate work.

The study of marketing provides students with an opportunity to prepare for careers in marketing management, product management, sales, advertising and promotions management, marketing research, retailing, and international marketing.

MAJOR IN MARKETING

To be accepted into the Marketing major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. In addition to the General Education requirements of the University and the Progression Requirements of the Belk College of Business (as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section), the following courses are required: BLAW 3150; ECON 3125; FINN 3120; INFO 3130; MGMT 3140, 3160, 3280; MKTG 3110, 3219, five Marketing electives; and OPER 3100. Students may attempt each of these 15 courses three times.

To obtain a B.S.B.A. in Marketing, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. A student must also have a 2.0 GPA in all required business courses with no more than one D left standing for these courses. When a student repeats a course, both the old grade and the new grade are included in the computation described in the preceding sentence.

SUGGESTED CURRICULUM for B.S.B.A. in MARKETING

Junior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
ECON 3125 Managerial Economics	3	FINN 3120 Financial Management	3
MGMT 3140 Mgmt. & Org Behavior	3	OPER 3100 Operations Management	3
MGMT 3160 Business Communications	3	Marketing Elective****	3
MKTG 3110 Marketing Concepts	3	Marketing Elective****	3
Non-Business Elective**	3	General Elective*	3

Senior Year			
Fall		**Spring**	
Course	**Credit**	**Course**	**Credit**
BLAW 3150 Business Law I	3	MGMT 3280 Business Policy	3
INFO 3130 Mgmt. Info. Systems	3	MKTG 3219 Mktg Strategy***	3
Marketing Elective****	3	Marketing Elective****	3
Marketing Elective****	3	General Elective*	3
General Elective*	3	General Elective*	3

**General Electives are courses offered outside or inside the Belk College of Business.*

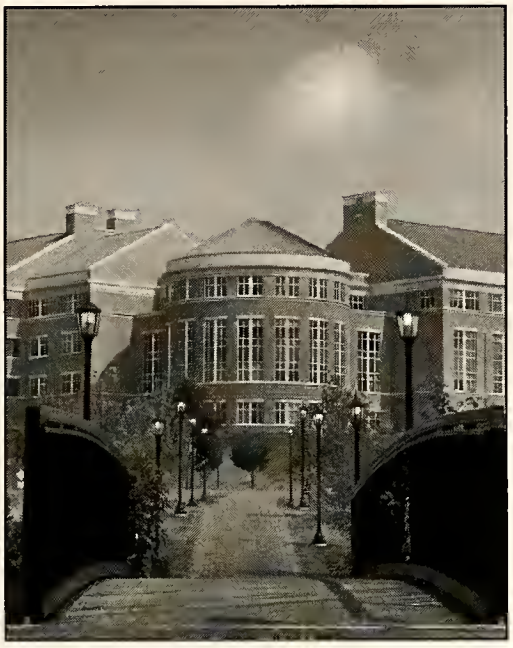
***Non-Business Electives are courses offered outside the Belk College of Business.*

*******Required Course:*** *MKTG 3219 Marketing Strategy (three Marketing Electives must be completed prior to enrolling in this course)*

********Select five of the following Marketing Electives:***

MKTG 3000 Topics in Marketing
MKTG 3210 Marketing Research and Analysis
MKTG 3211 Advertising & Promotions Management
MKTG 3212 Retailing Management
MKTG 3213 Personal Selling & Sales Management
MKTG 3214 Internet Marketing
MKTG 3215 Global Marketing
MKTG 3216 Consumer Behavior
MKTG 3220 Sports Marketing
MKTG 3400 Marketing Internship
MKTG 3800 Directed Study

Internship. Because the Department of Marketing is committed to experiential learning, it provides for Marketing majors to use one internship for academic credit. A proposal must be approved by the Department Chair before starting the internship. A minimum of MKTG 3110 (Marketing Concepts) with a *C* or better, an overall GPA of at least 2.0, and completion of at least two Marketing electives are required. The student may not have a current or prior work history with the internship company.



College of Computing and Informatics

www.cci.uncc.edu

Dean: *Mirsad Hadzikadic*
Associate Dean: *Richard A. Lejk*
Executive in Residence: *Olin Broadway*

The University of North Carolina at Charlotte's College of Computing and Informatics (CCI) is part of a dynamic and exciting, educational, and research institution that combines the knowledge and expertise of multidisciplinary faculty, industry professionals, and students. The CCI was formed in 2000 as the College of Information Technology, with the mission of educating information specialists, conducting leading-edge research, and partnering with area businesses of great importance to the Charlotte community and the University. It was renamed the College of Computing and Informatics in 2006 in an effort to reflect the College's commitment to maintain relevancy with the ever-changing world of information technology that impacts all of our lives on a daily basis.

With educational programs rooted in a strong foundation of research, the CCI combines the talents of on- and off-campus partners in achieving its mission. Academic programs include Bachelor's, Master's, and Ph.D. degree programs in computer science, software and information systems, and information technology. Committed to the concept of life-long learning, the College also offers undergraduate and graduate certificate programs.

A key component of all CCI academic programs is the team interaction between students, faculty, and community partners. Through their involvement in real-world projects, students apply what they learn, thus, giving them practical experience as they help businesses solve computing and informatics challenges.

The three primary missions of the CCI are:

- to educate and prepare the computing and informatics professionals of tomorrow
- to conduct leading-edge research in enterprise information systems
- to partner with area industry to develop computing and informatics solutions

Computer Science Program. The Computer Science Department offers a wide variety of programs to match the diverse requirements of employers. The computer science major may pursue either a Bachelor of Science or a Bachelor of Arts degree.

The Bachelor of Science program offers the student two very different concentrations: computer science or computer engineering. The computer science option is centered on software development. Theoretically based, this program prepares students to continue their education in master's or doctoral programs, or to enter the business world as a computer scientist. The computer engineering option prepares the graduate to enter the computer industry either as a computer hardware design engineer or as a computer scientist with a heavy dose of mathematics, the physical sciences, and electrical engineering.

The Bachelor of Arts option is in computer science. As in the Bachelor of Science program, the computer science concentration prepares the student to enter the business world as a computer scientist. The emphasis in this program is less theoretical and mathematical, and more on the applied side.

The curriculum provides flexibility for the student to tailor a program to meet her or his needs and objectives. For the computer science option in the Bachelor of Science or Bachelor of Arts degrees, the student must select a minimum of 15 hours outside of computer

science in which to study. This "minor-like" program allows the student to select from the full spectrum of University programs and majors, including the University Honors Program.

Software and Information Systems Program. The Department of Software and Information Systems is primarily focused on the study of technologies and methodologies for information system architecture, design, implementation, integration, and management. An illustrative list of questions/issues of interests includes:

- Analysis and design methodologies of component-based software systems
- Integration and interoperation of information systems
- Theories and methodologies of software development
- Information system security architecture and protocols
- Design of efficient heterogeneous computer networks
- Architectures for distributed systems
- Collaborative system technology and design
- Human/computer interaction
- Design of information systems based on ubiquitous/pervasive computing
- Software engineering
- Quality, testing, and simulation of software designs
- Social, ethical, and policy issues related to IT
- Information system architectures for electronic enterprise
- Technologies for information system privacy

The Department of Software and Information Systems offers a Bachelor of Arts program that focuses on the applications of information technology. Software is the driving force of the emerging information economy. The Department of Software and Information Systems focuses on issues related to developing software, information systems, and their interactions with people. This degree program is committed to best prepare students to match the diverse requirements of employees.

Experiential Learning Programs. Students are encouraged to participate in professional work experiences in support of their academic and career development through the cooperative education, 49ership, and internship programs offered to them. The College works with the University Career Center to expand experiential learning offerings to enable more students to graduate with career-related experience. For more information about experiential learning programs, please see "Experiential Learning Programs" in the "Student Services and Programs" section in this *Catalog*.

Department of
Computer Science

www.cs.uncc.edu

Chair and Professor: *L. Hodges*
Associate Chair and Professor: *K. Chen*
Assistant Chairperson and Director of Freshman Programs: *J. Frazier*
Director of MS Program: *B. Wilkinson*
Director of Information Technology PhD Program: *J. Xiao*
Bank of America Endowed Chair: *W. Ribarsky*
Professors: *L. Mays, Z. Ras, W. Ribarsky, B. Wilkinson, J. Xiao*
Professors Emeriti: *M. Allen, G. Epstein, G. Revesz, J. Schell*
Associate Professors: *T. Dahlberg, C. Gibas, R. Lejk, D. Livesay, T. Mostafavi, K. Subramanian*
Associate Professor Emeritus: *H. Razavi*
Assistant Professors: *T. Barnes, J. Fan, A. Fodor, R. Kosara, A. Lu, K. Najarian, J. Payton, M. Shin, R. Souvenir, Z. Su, Y. Wang, Z. Wartell, D. Wilson, X. Wu, J. Yang, M. Youngblood*
Senior Lecturer: *D. Cassidy, J. Frazier*
Lecturers: *C. Goodrum, R. Ilson, L. Lehmann, S. Scott*
Adjunct Professor: *Wieczorkowski*

Computer science spans a wide range, from its theoretical and algorithmic foundations to cutting-edge developments in robotics, computer vision, intelligent systems, bioinformatics, and other exciting areas. We can think of the work of computer scientists as falling into three categories:

1.) They design and implement software. Computer scientists take on challenging programming jobs. They also supervise other programmers, keeping them aware of new approaches.

2.) They devise new ways to use computers. Progress in the CS areas of networking, database, and human-computer-interface enabled the development of the World Wide Web. Now, researchers are working to make robots to be practical aides that demonstrate intelligence, are using databases to create new knowledge, and are using computers to help decipher the secrets of our DNA.

3.) They develop effective ways to solve computing problems. For example, computer scientists develop the best possible ways to store information in databases, send data over networks, and display complex images. Their theoretical background allows them to determine the best performance possible, and their study of algorithms helps them develop new approaches that provide better performance. Computer science spans the range

from theory to programming. While other disciplines can produce graduates better prepared for specific jobs, computer science offers a comprehensive foundation that permits graduates to adapt to new technologies and new ideas.

The Department of Computer Science offers programs leading to four degrees: Bachelor of Arts, Bachelor of Science, Master of Science, and Ph.D. in Information Technology. (See the *UNC Charlotte Graduate Catalog* for information on the M.S. and Ph.D. degrees). Students are prepared for their profession through a comprehensive program of courses and research opportunities in Departmental state-of-the-art computing labs.

Cooperative Education in Computer Science. By participating in the Cooperative Education program, students in computer science may pursue their education along with alternating work experiences so that they may be better prepared to enter their chosen professional career. Interested students should contact the University Career Center for more information.

BACHELOR OF ARTS: COMPUTER SCIENCE

The Computer Science Concentration consists of 48 hours in computer science, and 12 hours in mathematics. Courses included are: ITCS 1214, 1215, 2163, 2175, 2214, 2215, 3155, 3160, 3166, 3688, 4102, nine semester hours of approved ITCS or ITIS courses numbered 3000 or above, and six additional semester hours of approved ITCS courses numbered 4000 or above; ENGL 2116 and COMM 2105; MATH 1120, 2164, STAT 1220, 2223; or MATH 1241, 1242, 2164, STAT 2122.

A component of 15 semester hours of approved non-computer science courses forming an integrated program of outside concentration must be included. The business outside concentration consists of a prescribed set of courses from the College of Business and one 3000-level course from a restricted set of choices. The mathematics outside concentration consists of 9 semester hours of approved mathematics courses at the 3000 level or above (6 hours of additional free electives must be taken in this case). In general, an outside concentration consists of 6 hours at the 3000-level or above, plus an additional 9 hours of approved non-computer-related courses, forming an integrated program of secondary strength.

BACHELOR OF SCIENCE: COMPUTER SCIENCE

The Computer Science Concentration consists of 54 hours of computer science and 12 hours in mathematics. Courses included are: ITCS 1214, 1215, 2175, 2181, 2214, 2215, 3143, 3155, 3160, 3166, 3182, 3688, 4102, nine semester hours of approved ITCS or ITIS courses numbered 3000 or above, and six additional semester hours of approved ITCS courses numbered 4000 or above; MATH 1241, 1242, 2164, STAT 2122. ENGL 2116 is also required.

A component of 15 semester hours of approved non-computer science courses forming an integrated program of outside concentration must be included. The business outside concentration consists of a prescribed set of courses from the College of Business and one 3000-level course from a restricted set of choices. The mathematics outside concentration consists of 9 semester hours of approved mathematics courses at the 3000 level or above (6 hours of additional electives must be selected in this case). In general, an outside concentration consists of 6 hours at the 3000-level or above, plus an additional 9 hours of approved non-computer-related courses, forming an integrated program of secondary strength.

BACHELOR OF SCIENCE: COMPUTER SCIENCE, COMPUTER ENGINEERING CONCENTRATION

The Computer Engineering Concentration consists of 42 hours of computer science, 15 hours of mathematics, 12 hours of technical electives, ECON 2101, and ENGL 2116. These include: ITCS 1214, 1215, 2175, 2181, 2214, 2215, 3143, 3155, 3182, 3183, 3688, 4102, and six additional semester hours of approved ITCS courses numbered 4000 or above; MATH 1241, 1242, 2164, 2171, STAT 2122. Twelve hours of ITCS/ITIS and ECGR technical electives must be approved by the Department.

Students must also complete PHYS 2101, 2101L, 2102, 2102L, and 3141, and CHEM 1251 and 1251L. A component of related work must include 11 hours of electrical and computer engineering courses: ECGR 2111, 2112, 2155, 2156, and 3131.

MINOR IN COMPUTER SCIENCE

Requirements for the minor in Computer Science include completion of 24 hours of computer science: ITCS 1214, 1215, 2175, 2214, 2215, 3155, 3160, and 3688.

MINOR IN INFORMATION SCIENCE

Requirements for the minor in Information Science include completion of 24 hours of computer science: ITCS 1214, 1215, 2175, 2214, 3112, 3143, 3155, and 3160.

CERTIFICATE IN COMPUTER PROGRAMMING

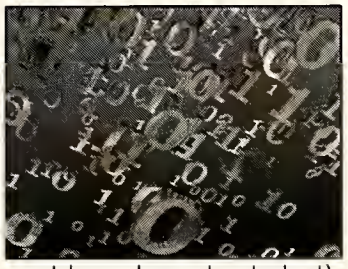
The Department of Computer Science offers a certificate in Computer Programming. A certificate will be awarded by the Department of Computer Science to post-baccalaureate students (students having earned a bachelor's degree in any field, with one semester of calculus, who have enrolled with the graduate school as

a post-baccalaureate student), who have completed the course requirements listed below:

- ITCS 1214 Introduction to Computing I
- ITCS 1215 Introduction to Computing II
- ITCS 2175 Logic and Algorithms
- ITCS 2214 Data Structures
- ITCS 2215 Design and Analysis of Algorithms
- ITCS 3112 Design and Implementation of Object-Oriented Systems
- ITCS 3155 Software Engineering
- ITCS 3160 Database Design and Implementation
  OR ITCS 4145 Parallel Computing

CERTIFICATE IN COMPUTER ARCHITECTURE

The Department of Computer Science offers a certificate in Computer Architecture. A certificate will be awarded by the Department of Computer Science to post-baccalaureate students (students having earned a bachelor's degree in any field, with one semester or calculus, who have enrolled with the graduate school as a post-baccalaureate student), who have completed the course requirements listed below:



- ITCS 1214 Introduction to Computing I
- ITCS 1215 Introduction to Computing II
- ITCS 2181 Computer Logic and Design
- ITCS 3143 Operating Systems
- ITCS 3182 Computer Org and Architecture
- ITCS 3183 Hardware Systems Design
- ITCS 4145 Parallel Computing
- ITCS 4181 Microcomputer Interfacing

SUGGESTED CURRICULUM: B.A. DEGREE IN COMPUTER SCIENCE

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 1214	3	ITCS 1215	3
MATH 1120*	3	ITCS 2175	3
ENGL 1101	3	STAT 1220*	3
Social Science	3	Science	4
LBST 110x	3	ENGL 1102	3

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 2214	3	ITCS 2215	3
ITCS 2163	3	COMM 2105	3
STAT 1223*	3	MATH 2164*	3
ENGL 2116	3	LBST 2102	3
LBST 2101	3	LBST 221x	3

Junior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 4102	3	ITCS 3155	3
ITCS/ITIS Elective	3	ITCS 3160	3
Science	3	ITCS 3166	3
Related Work	3	Related Work	6
Elective	1		

Senior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 4xxx	3	ITCS 4xxx	3
ITCS 3688	3	ITCS/ITIS Elective	3
ITCS/ITIS Elective	3	Electives	7
Related Work	3	Related Work	3
Elective	3		

Total Hours = 120

** A mathematics option consisting of MATH 1241, 1242, and 2164, and STAT 2122 may be selected as an alternate to the math courses listed.*

SUGGESTED CURRICULUM: B.S. DEGREE IN COMPUTER SCIENCE

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 1214	3	ITCS 1215	3
MATH 1241	3	ITCS 2175	3
ENGL 1101	3	MATH 1242	3
Social Science	3	ENGL 1102	3
LBST 110x	3	Science	4

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 2181	3	ITCS 2215	3
ITCS 2214	3	MATH 2164	3
STAT 2122	3	LBST 2102	3
LBST 2101	3	Science	3

ENGL 2116	3	Related Work	3

Junior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 3182	3	ITCS 3155	3
ITCS 4102	3	ITCS 3688	3
ITCS/ITIS Elective	3	ITCS/ITIS Elective	3
Related Work	3	Related Work	3
Elective	2	LBST 221x	3

Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 3160	3	ITCS 3143	3
ITCS 4xxx	3	ITCS 3166	3
ITCS/ITIS Elective	3	ITCS 4xxx	3
Related Work	3	Related Work	3
Elective	3	Elective	3

Total Hours = 120

SUGGESTED CURRICULUM: B.S. DEGREE, COMPUTER ENGINEERING CONCENTRATION

Freshman Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 1214	3	ITCS 1215	3
MATH 1241	3	ITCS 2175	3
CHEM 1251	3	MATH 1242	3
CHEM 1251L	1	PHYS 2101	3
ENGL 1101	3	PHYS 2101L	1
LBST 110x	3	ENGL 1102	3

Sophomore Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 2181	3	ITCS 2215	3
ITCS 2214	3	ECGR 2111	3
ENGL 2116	3	ECGR 2155	1
LBST 2101	3	MATH 2164	3
PHYS 2102	3	MATH 2171	3
PHYS 2102L	1	LBST 2102	3

Junior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 3182	3	ITCS 3155	3
ECON 2101	3	ITCS 3688	3
ECGR 2112	3	ITCS 4102	3
ECGR 2156	1	ECGR 3131	3
PHYS 3141	3	LBST 221x	3
STAT 2122	3		

Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 3183	3	ITCS 3143	3
ITCS 4xxx	3	ITCS 4xxx	3
Tech Electives	6	Tech Electives	6
Free Elective	1		

Total Hours = 120

EARLY-ENTRY PROGRAM: Master of Science in Computer Science

Exceptional undergraduate students at UNC Charlotte may be accepted into the Master of Science in Computer Science and begin work toward a graduate degree before completion of the baccalaureate degree. The criteria for admission are the following:

1. A student may be accepted into the Early-Entry Program at any time after completion of 75 semester hours of undergraduate work applicable to the appropriate degree although it is expected that close to 90 hours will have been earned by the time the first graduate course is taken.
2. The application process and all required documentation (e.g., test scores, transcripts, letters of recommendation) are the same for early entry students as for other applicants to the program. Admission must be recommended by the Department of Computer Science and approved by the Graduate School. The admission status will be "provisional" pending the award of the undergraduate degree.
3. To be accepted into this program an undergraduate student must have at least a 3.2 overall GPA and a minimum 3.3 GPA in the department of Computer Science.
4. If an Early-Entry student has not met the normal graduate admission requirements of a 2.75 overall undergraduate GPA and a 3.0 junior senior GPA at the end of his/her baccalaureate degree, she/he will be dismissed from the graduate program.
5. Students accepted into an Early-Entry Program will be subject to the same policies that pertain to other

matriculated graduate students. Generally, it will be assumed that early entry students will finish their baccalaureate degrees before they complete 15 hours of graduate work.

6. This Early-Entry Program is also accelerated in which up to 12 hours earned at the graduate level may be substituted for required undergraduate hours. In other words, up to 12 hours of graduate work may be "double counted" toward both the baccalaureate and graduate degrees.

Approved Course Substitutions for Early/Accelerated Entry into Computer Science MS program

Required CSCI U/G	Graduate substitutions
ITCS 3160 Database Design & Implementation	ITIS 5160 Applied Database, (applies for graduate credit only if entering the MSIT program), or ITCS 6160 Database Systems, (applies for graduate credit only if entering the MS Computer Science program)
ITCS 3143 Operating Systems	ITCS 6144 Operating Systems Design
ITCS 3155 Software Engineering	ITCS 6112 S/W Systems Design & Implementation
ITCS 4102 Programming Languages	ITCS 5102 Survey of Programming Languages
ITCS 3182 Computer Organization & Architecture	ITCS 5141 Computer Org & Architecture
ITCS 3183 Hardware Systems Design	ITCS 6182 Advanced Computer Architecture
ITCS 3166 Intro to Computer Networks	ITCS 6166 Computer Communications & Networks
ITCS 3XXX/4XXX (up to 9 credit hours)	Any graduate courses from CCI that are not otherwise used in a substitution above (up to 9 hours)

Department of Software and Information Systems

www.sis.uncc.edu

Chair and Professor: *B. Chu*
Professor: *Y. Zheng*
Associate Professor: *G. Ahn, W. Tolone*
Assistant Professors: *B. Kang, C. Latulipe, S. Lee, Z. Liu, A. Raja, H. Richter, Y. Wang, D. Wilson*
Lecturers: *B. Long, A. Kombol*
Adjunct Professors: *Foley, T. Inskeep, T. Kitrick, Williams*
Adjunct Lecturers: *Callahan, He, Jancula*
Director of Undergraduate Studies: *B. Long*

The Bachelor of Arts in Software and Information Systems is designed for students interested in pursuing a career in Software Engineering or Information Technology. This degree will also well prepare students to pursue graduate studies in related areas. The focus of this program includes:

- Network-based Application Development
- Software Engineering (design, integration, testing, and assurance)
- e-Business Technologies
- Information Security and Privacy
- Human – Computer Interaction
- IT Infrastructure Design
- Ubiquitous Computing

The Department of Software and Information Systems offers both undergraduate and graduate programs. The undergraduate program leads either to the Bachelor of Arts in Software and Information Systems or to a minor in Software and Information Systems. The graduate program leads to a Master of Science in Information Technology (see the *UNC Charlotte Graduate Catalog* for information on the M.S. degree). Graduate certificate programs in Information Security and Privacy and Information Technology Management are also available. To assist them in their studies, students have access to advanced computer labs and software where they can practice and experiment in controlled environments. In addition, the Department maintains a high degree of interaction with working industry professionals who provide real-world expertise and experience.

Cooperative Education in Software and Information Systems. By participating in the Cooperative Education program, students in the department may pursue their education along with alternating work experiences so that they may be better prepared to enter their chosen professional career. Interested students should contact the University Career Center for more information.

BACHELOR OF ARTS: SOFTWARE AND INFORMATION SYSTEMS (Traditional Series)

Under this program, the requirements for the B.A degree may be fulfilled by completing either of two series of courses. The traditional series emphasizes advanced programming and mathematics skills. An alternate series, the Information Technology track,

emphasizes usability, security, and reliability of IT infrastructures, writing and communications skills. Both sets of courses prepare students for a wide variety of jobs or graduate studies.

The *Traditional Series* requires 120 credit hours total including 54 hours of major courses, 12 hours of English and communications courses, 12 hours in mathematics and statistics, 10 hours of sciences, and up to 17 hours of general education courses and free electives. Required major courses include: ITIS 2300, 3200, 3300, 3310, and 3320; ITCS 1214, 1215, 2175, 2214, 2215, 3143, 3160, 3166, and 3688; and twelve semester hours of approved ITIS or ITCS courses numbered 3000 or above. The mathematics and statistics requirements can be fulfilled by completing one of two course sequences:

- MATH 1120, 2164, and STAT 1220, 2223
- MATH 1241, 1242, 2164, and STAT 2122

In addition, each student must complete at least 15 semester hours of courses in a concentration of courses that form a coherent area of study related to developing applications of information systems. At least six of the 15 hours must be upper division courses. These courses must be completed in a major outside the College of Computing and Informatics and require approval of the student's academic advisor.

SUGGESTED CURRICULUM

Freshman Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 1214	3	ITCS 1215	3
MATH 1120*	3	ITCS 2175	3
ENGL 1101	3	ENGL 1102	3
LBST 110x	3	STAT 1220*	3
Science with lab	4	Science	3

Sophomore Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 2300	3	ITCS 2215	3
ITCS 2214	3	Social Science	3
ENGL 2116	3	COMM 2105	3
MATH 2164*	3	LBST 2101	3
STAT 2223*	3	Outside concentration	3

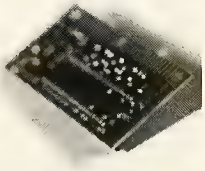
Junior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITCS 3166	3	ITCS 3143	3
ITCS 3688	3	ITCS 3160	3
ITIS 3300	3	ITCS 3310	3
LBST 2102	3	ITIS/ITCS Elective	3
Outside concentration	3	Outside concentration	3

Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ITIS 3200	3	ITIS/ITCS Elective	3
ITIS 3320	3	ITIS/ITCS Elective	3
ITIS/ITCS Elective	3	LBST 221x	3
Outside concentration	3	Outside concentration	3
Elective	3	Elective	2

Total Hours = 120

**A mathematics option consisting of MATH 1241, 1242, 2164, and STAT 2122 may be selected as an alternate to the math courses listed.*

BACHELOR OF ARTS: SOFTWARE AND INFORMATION SYSTEMS (Information Technology Track)



The *Information Technology Track* requires 120 credit hours total including 45-48 hours of major courses, 21 hours of English and communications courses, 6 hours in mathematics and statistics, 10 hours of sciences, and 14-17 hours of general education courses and free electives. Required major courses include: ITIS 1203, 1210, 2300, 3100, 3130, 3200, 3300, 3320; ITCS 1214, 1215, 3160, 3166 (or ITIS 4166), and 3688; INFO 3211; 3 semester hours of approved ITIS or ITCS courses numbered 3000 or above; and 3 hours of computer competency or free electives. Students must demonstrate competency in standard office applications such as word processing, spreadsheets, and presentation software or take ITCS 1101. The required mathematics and statistics courses are MATH 1100 (or MATH 1103) and STAT 1220.

In addition, each student, in consultation with his or her academic advisor, must complete at least 21 semester hours of courses by *either*:

1) Completing the requirements for a minor chosen by the student even if doing so requires more than 21 hours (if the minor can be completed in less than 21 hours, the remaining hours become free electives) **OR**
2) Completing a series of courses in a major that does not offer a minor. These courses must form a coherent area of study related to developing applications of information systems. The courses selected must include a minimum of 9 hours of upper division courses.

In completing this requirement, students must comply with prerequisites and other applicable academic regulations for courses offered by any department, even if doing so requires exceeding the 120 hour minimum necessary for graduation.

SUGGESTED CURRICULUM

Freshman Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ITIS 1203	3	ITIS 1210	3
ITCS 1214	3	ITCS 1215	3
MATH 1100*	3	ENGL 1102	3
ENGL 1101	3	Elective**	3
Science with Lab	4	Social Science	3

Sophomore Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ITIS 2300	3	ITIS 3130	3
COMM 2100	3	ITIS 3200	3
LBST 1xxx	3	COMM 2105	3
STAT 1220	3	ENGL 2116	3
Minor-1	3	Minor-2	3

Junior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ITIS 3300	3	ITCS 3160	3
LBST 2101	3	ITIS 3320	3
LBST 2102	3	ENGL 4181/4183	3
Science	3	Minor-4	3
Minor-3	3	Minor-5	3

Senior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ITCS 3166/ITIS 4166	3	ITIS 3100	3
ITCS 3688	3	ITIS/ITCS Elective	3
INFO 3211	3	ENGL 4182/COMM 3141	3
Free Elective	2	LBST 221x	3
Minor-6	3	Minor-7	3

Total Hours = 120

**MATH 1103 may be substituted for MATH 1100.*
***If competency in office applications can be demonstrated. Otherwise, ITCS 1101 is required.*

MINOR IN SOFTWARE AND INFORMATION SYSTEMS

This program is designed to provide students with the Information Technology knowledge necessary for today's information-based society. Students will not only gain hands-on knowledge of how to use the Internet to develop effective and easy-to-use applications but also will understand critical issues in designing information systems such as requirements development, integration, security and privacy, legal and policy considerations, and project management.

Program Requirements. The minor requires 18 credit hours. The following courses (9 credit hours) are required:

- ITIC 1214 Introduction to Computer Science I (3)
- ITIS 2300 Introduction to Web-Based Application Development (3)
- ITIS 3132 Information Systems (3)

Students should select three of the following courses (9 credit hours):

- ITCS 1215 Introduction to Computer Science II
- ITIS 3130 Human-Computer Interactions
- ITIS 3131 Human and Computer Information Processing
- ITIS 3200 Introduction to Information Security and Privacy
- ITCS 3160 Data Base Design and Implementation**
- ITCS 3688 Computers and their Impact on Society***

***If this course is to be selected, the student must also select ITCS 1215.*
****This course meets the General Education Requirements for written and oral communications.*

College of Education

http://education.uncc.edu/coe

Dean: *Mary Lynne Calhoun*
Associate Dean: *Barbara A. Edwards*
Assistant Dean: *Andrea Moshier*
Director of the Office of Teacher Education Advising and Licensure: *Sam F. Nixon*
Director of the Office of Field Experiences: *Victoria P. Jaus*
Director of the Office of Educational Outreach: *Victor B. Mack*
Director of the Teaching Fellows Program: *Misty L. Cowan-Hathcock*
Director of the Center for Math, Science, & Technology Education: *David C. Royster*
Instructional Technology: *Lonnie Bateman, Ed Conway, Dane Hughes*
Academic Advisors: *Joshua D. Avery, Kimberly A. Brooks, Arsala Z. Khan*

The mission of the College of Education at UNC Charlotte is to prepare excellent professionals who are knowledgeable, effective, reflective, collaborative, and responsive practitioners who are leaders in their fields. This mission is accomplished by working in partnership with schools, communities, and university colleagues and in response to the University of North Carolina at Charlotte's commitment to children, families, and schools.

PROGRAM RESPONSIBILITIES AND VALUES

The College of Education has these undergraduate program responsibilities:

- To develop, deliver, and evaluate high quality undergraduate programs that prepare teachers and other professional personnel for schools and related agencies.
- To operate programs that meet the standards of external governing, licensing, and accrediting agencies.
- To address the culturally diverse educational needs of its particular region.
- To initiate and support activities that enrich the global perspectives of its faculty and students.
- To respond effectively to the problems and needs of children, their families, and professionals in schools and related agencies.

The College of Education holds these program values:

- *We are a community of scholars* who are committed individually and collectively to creating learning opportunities and environments where we enhance the capacity of our students to have a positive impact on children, youth, communities, families and schools. We are committed to meeting the developmental and educational needs of our students and to maximize the growth, development, and learning of each individual.

- *In our programs of study,* we are committed to high quality programs that are standards-based, to the ongoing assessment of candidates and programs for the purpose of continuous improvement, to collaboration and outreach, and to the highest standards of professional practice and scholarship. We are committed to international understanding and involvement.

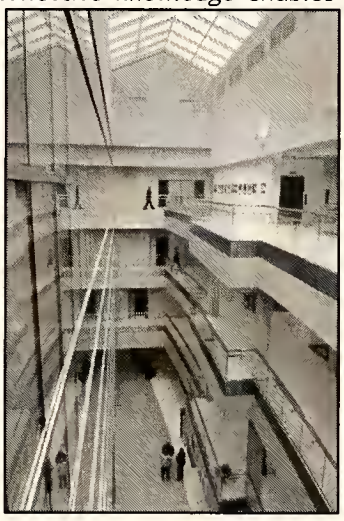
- *In fulfilling our professional roles,* we are committed to the generation, dissemination, and application of knowledge. We, therefore, expect that faculty will be teacher-scholars and that they will maintain a balanced commitment to teaching, research, and service. We have a strong commitment to academic excellence and exceptional quality in all that we do.

- *In our dealings with each other, our students, and our professional colleagues in schools and communities,* we are committed to valuing diversity and to speaking out against oppression. We are committed to thoughtfulness, reflection, flexibility, and the exploration of new ideas. We are committed to openness, honesty, forthrightness, and the highest standards of integrity and ethical behavior. We strive to be collegial, collaborative, human, and respectful of others, even when we are not in total agreement with their views or with their work, and we are committed to being sensitive to and supportive of others, including students, staff, faculty, and our professional colleagues in the community.

CONCEPTUAL FRAMEWORK FOR TEACHER EDUCATION PROGRAMS

Rising to the Challenge: Preparing Excellent Professionals

Excellent professionals possess a comprehensive knowledge base that is comprised of conceptual knowledge, pedagogical knowledge, and reflective knowledge. *Conceptual knowledge* relates to the individual's broad knowledge base as well as a more specialized knowledge base in the content field and knowledge of how human beings learn and develop. *Pedagogical knowledge* entails the understanding of methods of effective teaching: knowledge of how to teach subject matter and knowledge of how to teach the subject matter to specific learners, attention to individual differences, and how to create environments that support learning. *Reflective knowledge* enables cogent evaluation of teaching practice, including self-appraisal. Excellent professionals understand how to blend these types of knowledge in actuating teaching and learning in positive ways. Excellent professionals make connections between the knowledge base and the uses of this knowledge. Four particular uses of knowledge are emphasized within professional education programs at UNC Charlotte.



1.) To provide effective instruction in order to have a positive impact on P-12 student learning

2.) To respond to the needs of P-12 learners and to provide developmentally appropriate, age appropriate, individually appropriate, and culturally responsive instruction

3.) To collaborate with families, communities, and colleagues to benefit children, youth, and young adults

4.) To provide effective leadership for the improvement of professional practices at a variety of levels for the benefit of children, youth, and young adults.

The UNC Charlotte community charged with the preparation of teachers, including the College of Education and the College of Arts and Sciences and their respective departments, contribute to the knowledge base through course instruction and other worthy experiences. In summary, UNC Charlotte develops excellent professionals who are knowledgeable, effective, reflective, responsive to equity and diversity, collaborative, and who are leaders in their profession.

UNDERGRADUATE PROGRAMS

The College of Education offers the following majors:

- Child and Family Development: licensure (Birth-Kindergarten) and non-licensure tracks
- Elementary Education (grades K-6)
- Middle Grades Education (grades 6-9)
- Special Education: General Curriculum (grades K-12)
- Special Education: Adapted Curriculum (grades K-12)

In collaboration with appropriate departments in the College of Arts and Sciences, it offers professional education coursework that can lead to licensure to teach in the following areas of Secondary Education (grades 9-12):

- Biology
- Chemistry
- Comprehensive Science
- Comprehensive Social Studies
- Earth Science
- English
- History
- Mathematics
- Physics

In collaboration with appropriate departments in the College of Arts and Sciences, it offers professional education coursework that can lead to licensure to teach in the following areas of K-12 Education:

- Art
- Dance
- Music
- Theatre
- French
- German
- Spanish

All professional education programs in the College of Education are approved by the North Carolina Department of Public Instruction (NCDPI), and they have continuing accreditation from the National Council for Accreditation of Teacher Education (NCATE).

TEACHER EDUCATION POLICIES AND PROCEDURES

Admission to a Teacher Education Program. Students should apply for admission to a specific teacher education program during their sophomore year, and they must complete the admissions process in order to enroll in any professional education courses at the 3000 level or higher.

Minimum requirements for admission to all teacher education programs at UNC Charlotte include:

1.) An overall GPA of at least 2.5 in a minimum of 45 semester hours in University courses
2.) A grade of *C* or higher in both EDUC 2100 and SPED 2100 (or approved program-specific requirements)
3.) Passing scores on the Praxis I: Academic Skills Assessments in Reading, Writing, and

Mathematics; or an acceptable substitute score on the SAT or ACT
4.) Approval of the Chair (or his or her designee) of the Department that offers the program

Some teacher education programs have additional requirements for admission (e.g., references, an interview, additional tests, discipline-specific coursework). Information about these additional requirements and about procedures for applying for admission to a teacher education program can be obtained in the Office of Teacher Education Advising and Licensure (TEAL) in the College of Education. Students in Art, Music, Dance, or Theatre especially should check for specific admission requirements in their major department.

Retention in a Teacher Education Program. There are two minimum requirements for retention in a teacher education program:

1.) A grade of *C* or higher (a) in all professional education courses *and* (b) in all courses in the student's area of teaching specialization
2.) GPA of 2.5 or higher (a) overall, (b) in all professional education courses, *and* (c) in the student's area of teaching specialization

Some teacher education programs have additional or higher requirements for retention. Information about these additional requirements can be obtained in the program's home department. *Note: Requirements for admission to student teaching are higher than requirements for retention in the program.*

Admission to Year-Long Internship and Student Teaching. Most teacher education programs incorporate student teaching in a year-long internship that spans a student's senior year. The year-long internship consists of one semester of intensive clinical work in the classroom while completing coursework on campus. This clinical semester is followed by a full semester of student teaching, usually completed in the same classroom.

Students must apply and be formally admitted to a year-long internship two semesters prior to the start of student teaching, which is usually in the second semester of the junior year. In addition, during the first semester of their year-long internship, students are screened for eligibility for student teaching. The minimum requirements for admission to student teaching are higher than the requirements for retention, as shown below:

1) Senior status
2) Completion of all other course work in a student's program of study
3) An overall GPA of 2.50 or higher in the student's total program of study
4) Grades of *C* or higher in all professional education courses and a GPA of 2.75 or higher in those courses
5) Grades of *C* or higher in all courses in the student's area of teaching specialization and a GPA of 2.75 or higher in those courses
6) Prior admission to a teacher education program
7) A recommendation from the student's faculty advisor(s) certifying readiness to student teach

Some teacher education programs have additional requirements for admission to the year-long internship and student teaching. Information about those requirements can be obtained from the program's home department. Information about procedures and deadlines for applying for year-long internships and student teaching in all programs can be obtained in the Office of Field Experiences in COED 139 or on the web at http://education.uncc.edu/ofe.

Department of
Reading and Elementary Education (REEL)

http://education.uncc.edu/reel

Chair: *R. Rickelman*
Professors: *H. Jaus, J. Passe, K. Wood*
Associate Professors: *R. Audette, B. Edwards, M. Green, W. D. Nichols, J. Piel, T. Rock, M. Spooner, M. Yon*
Assistant Professors: *L. Ausband, S. Hancock, B. Kissel, M. Mraz, D. Polly, S. Ramsey, B. Taylor*
Clinical Assistant Professors: *L. Baucom, M. Chapman, J. Frazier, S. Fuller, M. Hathcock, C. Luce*
Lecturer: *C. Hopper*

BACHELOR OF ARTS: ELEMENTARY EDUCATION

Coordinator: Louise Baucom

The B.A. program in Elementary Education qualifies graduates for an entry-level ("A") license to teach grades K-6.

Program Objectives. Graduates of the program are prepared to meet the 10 INTASC standards for new teachers in Content Pedagogy, Student Development, Diverse Learners, Multiple Instructional Strategies, Motivation and Management, Communication and Technology, Planning, Assessment, Reflective Practice, School and Community Involvement.

Requirements. The major in Elementary Education leading to the B.A. degree requires at least 120 semester hours as follows:

General Education (35-48 hours). Course options are listed on the program's Academic Planning Worksheet. Course selections must be initially approved by the student's Pre-Education advisor in the Teacher

Education Advising and Licensure (TEAL) Office and finally approved by the student's major advisor after admission to the Teacher Education Program in Elementary Education. General Education requirements may also be met through the "Articulation Agreement" with North Carolina Community Colleges.

An Academic Concentration (18 hours, including up to two courses that also meet General Education Requirements) is required in one of the following subject areas relevant to an elementary school classroom:

- The Arts
- Diversity Studies
- English and Communications
- Global Issues
- Global Studies and Foreign Language
- International Studies
- Math, Science, and Technology
- Mathematics
- Science
- Social Studies
- Visual and Performing Arts

The required and elective courses in each Academic Concentration are listed on the program's Academic Planning Worksheet. Course selections must be initially approved by the student's Pre-Education advisor in the Teacher Education Advising and Licensure Office and finally approved by the student's major advisor after admission to the Teacher Education Program in Elementary Education. With advisor approval, a full second major or a bona fide minor in an Arts and Sciences discipline may be substituted for the academic concentration.

Related Licensure Courses (1-13 hours). If these courses or acceptable substitutes have already been taken for General Education or Academic Concentration credit, no additional courses are required.

1) Practicing the Creative Arts (0-3): ARTE 2121 Development Arts, MUSC 2191 Musicianship, or DATH 1100 Exploration of Voice and Movement. The course must be in an area of the arts different from that taken for General Education.
2) Children's Literature (0-3): ENGL 3103 Children's Literature

Professional Education Courses (57 hours)

EDUC 2100 An Introduction to Education & Diversity in Schools (3)*
SPED 2100 Introduction to Students with Special Needs (3)*

Admission to Teacher Education and advisor's approval are required in order to register for any of the following courses:

ELED 3110 Instructional Design and the Use of Technology with Elementary School Learner (3)
ELED 3120 The Elementary School Child (3)
ELED 3221 Teaching Science to Elementary School Learners (3)
ELED 3223 Teaching Social Studies to Elementary School Learners (3)
ELED 3226 Teaching Language Arts to Elementary School Learners (3)
MAED 3222 Teaching Mathematics in the Elementary School, K-2 (3)
MAED 3224 Teaching Mathematics in the Elementary School, 3-6 (3)
EXER 3228 Integrating Physical Activity and Movement in Elementary Schools (2)
EXER 3229 Teaching Health and Safety to Elementary School Learners (2)
READ 3224 Teaching Reading to Primary Level Learners (3)
READ 3226 Teaching Reading to Intermediate Grade Learners (3)
EDUC 4290 Modifying Instruction for Learners with Diverse Needs (3)
ELED 4121 Measuring and Evaluating Learning in the Elementary School Curriculum (3)**
ELED 4122 Research and Analysis of Teaching Elementary School Learners (3)**
ELED 4220 Integrating Curriculum for Elementary School Learners (3)**
ELED 4420 Student Teaching/Seminar: K-6 Elementary Education (15)***

**Corequisite courses EDUC 2100 and SPED 2100 should be taken during a student's sophomore year; both must be completed with a grade of C or better to qualify for admission to the Teacher Education Program.*
***ELED 4121, ELED 4122, and ELED 4220 should be taken the semester before student teaching.*
****Enrollment in ELED 4420 requires admission to student teaching through the College's Office of Field Experiences.*

Electives. The number of free electives will vary depending upon how General Education and related licensure requirements are fulfilled. Students must complete at least 120 hours to meet the University graduation requirement.

Additional Requirements. The successful completion of a degree in Elementary Education includes meeting the North Carolina Department of Public Instruction's licensure requirements for K-6 certification. Consequently, additional requirements must be completed during the student's program and are listed below. Since state licensure requirements often change, additional work may be required to complete the program with a teaching license.

Dispositions. Dispositions are consistent patterns of behavior or habits that may impact teaching effectiveness. At the time of entry to the program, all elementary education majors are asked to sign a dispositions statement that fully identifies and describes behavior patterns that are appropriate and inappropriate

in professional conduct. Elementary education students are expected to demonstrate professional dispositions in all of their university activities (courses, clinicals, etc.).

Planning Sheet. All elementary education students are tracked through their program with a Program Planning Sheet. The original planning sheet is kept in the student's folder and lists all courses taken, transfer hours, general education and concentration requirements met, and courses remaining in the program. Note that the university requires that the minimum number of credits in a degree program is 120 credit hours.

Clinicals. Many courses in the professional program include a clinical requirement where students complete specific activities or designated hours in an elementary school. Clinicals are designed to expose students to diverse school demographics, locations, and programs.

Academic Concentration. Students must complete a concentration of 18 semester hours in an area of study to obtain North Carolina licensure in K-6th grades. The academic concentration includes both required courses and optional course selections in order to complete the concentration.

Year Long Internship. Teacher education candidates participate in the yearlong internship during their final year of the program. During the first semester, students spend one day per week in an assigned classroom while completing coursework on campus. During the second semester of the internship, students complete full-time student teaching in the same classroom. Applications for this year long internship are due two semesters before student teaching.

ePortfolio. To meet state licensure requirements, all students must demonstrate technology competence by completing an electronic portfolio with 18 specific work products electronically linked to a web site. Fifteen of the 18 products must be completed prior to student teaching. ELED 3110 prepares students for their ePortfolio documentation.

Academic Advising. Freshmen and sophomores who intend to major in Elementary Education are classified as Pre-Education students in Elementary Education. They are assigned an advisor in the College's Office of Teacher Education Advising and Licensure (TEAL), who helps them select appropriate General Education and Academic Concentration courses, and also helps them meet the requirements for admission to teacher education. Upon admission to the Teacher Education Program in Elementary Education, which typically occurs at the end of the sophomore year, students are assigned a major advisor in elementary education, who helps them plan the remainder of their program of study. Assignment of the student's major advisor is the responsibility of the Chair of the Department of Reading and Elementary Education (REEL).

Note: Upper-division elementary education courses are available on a limited basis in the summer.

Department of Middle, Secondary, and K-12 Education

http://education.uncc.edu/mdsk/

Chair and Associate Professor: *M. Spooner*
Professors: *L. Brannon, J. Jones, T. Perez,*
Associate Professors: *W. DiBiase, K. Hartman, D. Pugalee*
Assistant Professors: *L. Bailey, L. Cook, A. Harbaugh, T. Heafner, C. Hutchison, S. Kissau, L. Quach, R. Traore, G. Wiggan*
Clinical Assistant Professors: *V. Jaus, T. Petty*
Lecturers: *R. Crandell, M. Dietz, T. Ellis, L. Hart*

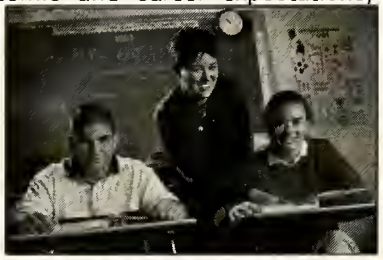
Please note:** **At the time of the printing of this Catalog, the undergraduate program for Middle, Secondary, and K-12 Education was undergoing revision. Students should check with their advisors for updates.

BACHELOR OF ARTS: MIDDLE GRADES EDUCATION

Coordinator: Kimberly J. Hartman

The B.A. program in Middle Grades Education qualifies graduates for an entry-level ("A") license to teach two of the following four content areas in grades 6-9: English language arts, mathematics, science, or social studies.

Program Objectives. Graduates of the program are prepared to: implement a middle grades philosophy to its fullest intent; design curriculum that is integrated, competency- and technology-based, and relevant to students' future academic and career expectations; transform their knowledge of two disciplines so they are accessible to middle grades students; use teaching methods appropriate to the unique developmental needs of early adolescents; make informed decisions about curricular issues and instructional practices in middle grades education; demonstrate pervasive caring and innovative leadership in their work with students and colleagues; and function as lifelong learners.



Requirements. The major in Middle Grades Education leading to the B.A. degree requires 120-128 semester hours as follows:

General Education (hours vary). Course options are listed on the program's Academic Planning Worksheet. Course selections must be initially approved by the student's Pre-Education advisor in the Office of Teacher Education Advising and Licensure (TEAL) and finally approved by the student's major advisor after admission to the Teacher Education Program in Middle Grades Education.

Academic Concentrations (41-48 hours). Academic Concentrations are required in two of the following four subject areas relevant to a middle grades classroom:

- English Language Arts
- Mathematics
- Science
- Social Studies

The required and elective courses in each Academic Concentration are listed on the program's Academic Planning Worksheet. Course selections must be initially approved by the student's Pre-Education advisor in the Office of Teacher Education Advising and Licensure (TEAL) and finally approved by the student's major advisor after admission to the Teacher Education Program in Middle Grades Education.

Professional Education (48 hours)

EDUC 2100 An Intro to Education and Diversity in Schools (3)*

SPED 2100 Introduction to Students with Special Needs (3)*

Admission to Teacher Education and advisor's approval are required in order to register for any of the following courses. ***See Academic Planning Worksheet in department for course sequence.***

MDLG 3130 The Early Adolescent Learner (4)
MDSK 3150 Research and Analysis of Teaching Middle and Secondary School Learners (3)
KNES 3152 Health and Safety Issues in Middle and Secondary Schools (2)
MDSK 3151 Instructional Design and the Use of Technology with Middle and Secondary School Learners (3)
MDLG 3131 The Philosophy and Curriculum of Middle Grades Education (4)
READ 3255 Integrating Reading and Writing Across Content Areas (W) (3)
MDSK 4251 Teaching Science to Middle and Secondary School Learners (3) and/or
MAED 3232 Teaching Mathematics to Middle School Learners (3) and/or
MDSK 4253 Teaching Social Studies to Middle and Secondary School Learners (3) and/or
ENGL 4254 Teaching English/Communication Skills to Middle and Secondary School Learners (3)
EDUC 4290 Modifying Instruction for Learners with Diverse Needs (2)
MDLG 4430 Student Teaching/Seminar: 6-9 Middle Grades (15)**

**Corequisite courses EDUC 2100 and SPED 2100 should be taken during a student's sophomore year; both must be completed with a grade of C or better to qualify for admission to the Teacher Education Program in Middle Grades Education.*
***Enrollment in MDLG 4430 requires admission to student teaching through the College's Office of Field Experiences.*

Students are required to complete a year-long internship beginning the semester prior to student teaching and ending upon the successful completing of student teaching.

Academic Advising. Freshmen and sophomores who intend to major in Middle Grades Education are classified as Pre-Education students in Middle Grades Education. They are assigned an advisor in the College's Office of Teacher Education Advising and Licensure (TEAL), who helps them select appropriate General Education and Academic Concentration courses and who helps them meet the requirements for admission to teacher education. Upon admission to the Teacher Education Program in Middle Grades Education, which typically occurs at the end of the sophomore year, students are assigned a major advisor in Middle Grades Education, who helps them plan the remainder of their program of studies. Assignment of the student's major advisor is the responsibility of the Chair of the Department of Middle, Secondary, and K-12 Education (MDSK).

LICENSURE IN K-12 EDUCATION IN FOREIGN LANGUAGES AND IN THE FINE AND PERFORMING ARTS

The Department of Middle, Secondary, and K-12 Education (MDSK) in the College of Education assists Departments in the College of Arts and Sciences to serve students interested in K-12 licensure for teaching French, German, Spanish, Art, Dance, Music, or Theatre. With the assistance of their major advisor, students apply to the Teacher Education Program through the Office of Teacher Education Advising and Licensure (TEAL) in the College of Education and through their department at the end of their sophomore year. Interested students are also encouraged to visit the TEAL Office at any time before applying to teacher education.

LICENSURE IN SECONDARY EDUCATION: BACHELOR OF ARTS OR BACHELOR OF SCIENCE

Coordinator: Tina Heafner

The undergraduate program in Secondary Education qualifies graduates for an entry-level (Standard Professional I) license to teach in one of the following subject areas in grades 9-12: English, History, Comprehensive Social Studies, Mathematics, Biology, Chemistry, Earth Sciences, Physics, or Comprehensive Science. Students major in an appropriate Arts and Sciences discipline, complete a three semester

sequence of courses which includes a yearlong internship incorporating student teaching. The Comprehensive Social Studies license builds on a major in History; the Comprehensive Science license builds on a major in one of the Sciences listed above.

Program Objectives. Graduates of the secondary education program are prepared to meet the state and national standards for all new teachers in the following areas: content pedagogy, student development, diverse learners, multiple instructional strategies, motivation and management, communication and technology, planning, assessment, reflective practice, professional growth, and school and community involvement.

Degree Requirements. The undergraduate program in secondary education requires a major in the College of Arts and Sciences in a discipline relevant to the curriculum in grades 9-12 and a maximum of 128 hours as follows:

General Education (32-38 hours). These course requirements vary with a student's academic major in Arts and Sciences and are defined by faculty in each major.

Core and Related Courses in an Appropriate Arts and Sciences Major (30-78 hours). Academic majors relevant to secondary education include English, History, Mathematics, Biology, Chemistry, Earth Sciences, and Physics. The requirements for each major are defined by faculty in that major.

Secondary Education (33 hours). MDSK 2100 (Diversity and Inclusion in Middle/Secondary Schools) should be taken prior to a student's final three semesters and must be completed with a grade of C or better for the student to qualify for admission to the Teacher Education Program in the selected field of secondary education. Other admission requirements include an overall GPA of at least 2.5 and passing scores on the Praxis I examinations (or acceptable SAT or ACT scores). Students should consult an advisor in the Office of Teacher Education Advising and Licensure as soon as they begin considering teacher education in order to graduate on time.

Admission to Teacher Education and Middle, Secondary, K-12 Education Department (MDSK) advisor's approval are required in order to register for any of the following courses:

Semester 1
SECD 4140 Adolescence and Secondary Schools (3)
MDSK 3151 Instructional Design and Technology Integration (3)

Students are required to complete a yearlong internship beginning the semester prior to student teaching and ending upon the successful completion of student teaching.

Semester 2 (First Semester of Yearlong Internship)
EDUC 4290 Modifying Instruction for Learners with Diverse Needs (3)
READ 3255 Integrating Reading and Writing Across Content Areas (W) (3)

One of the following content specific methods courses:

MDSK 4251 Teaching Science to Middle and Secondary School Learners (3)
MAED 3252 Teaching Mathematics to Secondary School Learners (3)
MDSK 4253 Teaching Social Studies to Middle and Secondary School Learners (3)
ENGL 4254 Teaching English/Communication Skills to Middle and Secondary School Learners (3)

Semester 3 (Second Semester of Yearlong Internship) - Enrollment in MDSK 4150 and any one of these four student teaching courses requires admission to student teaching through the College's Office of Field Experiences, a GPA of 2.75 in the major and in professional education courses with no grades lower than a C, and a 2.5 cumulative GPA.

MDSK 4150 Assessment, Reflection, and Management Practices for Teachers of Middle and Secondary Learners (3)
SECD 4451 Student Teaching/Seminar: 9-12 Secondary English (12)
SECD 4452 Student Teaching Seminar: 9-12 Secondary Mathematics (12)
SECD 4453 Student Teaching/Seminar: 9-12 Secondary Science (12)
SECD 4454 Student Teaching/Seminar: 9-12 Secondary Social Studies (12)

Elective Courses. These courses must be approved by the student's advisor.

Academic Advising. With the assistance of their major advisor in Arts and Sciences, students intending to seek a teaching license in an area of secondary education (gr. 9-12) apply to the Teacher Education Program through the Office of Teacher Education Advising and Licensure (TEAL) in the College of Education. Interested students are encouraged to visit the Teacher Education Advising and Licensure (TEAL) at any time before applying to teacher education. Upon admission to the Teacher Education Program, which typically occurs at the end of the sophomore year or beginning of the junior year, students are assigned a secondary education advisor in the Advising Center of the Department of Middle, Secondary, and K-12 Education. This advisor has particular responsibility for guidance about professional education coursework. Assignment of the student's secondary education advisor is the responsibility of the Chair of the Department of Middle, Secondary, and K-12 Education (MDSK).

Department of Special Education and Child Development

http://education.uncc.edu/spcd/

Interim Chair and Professor: *D. Gilmore*
The Lake and Edward J. Snyder, Jr. Distinguished Professor of Special Education: *D. Browder*
Professors: *M.L. Calhoun, F. Spooner, D. Test*
Associate Professors: *G. Campbell-Whatley, D. Ceglowski, N. Cooke, S. Gallagher, S. Lamorey, L. Rhoden, J. Smith, W. Wood*
Assistant Professors: *K. Anderson, J. Beattie, J. Gilbert, L. Jordan, B. Keilty, Y. Lo, B. Romanoff, Young*
Clinical Assistant Professors: *J. Baxter, J. Springs*
Lecturers: *D. Deason, P. Moore, S. Rebich*

BACHELOR OF ARTS: CHILD AND FAMILY DEVELOPMENT

The Child and Family Development program leading to the B.A. degree prepares graduates to work in educational and related settings that serve infants, toddlers, preschoolers, and kindergartners with and without disabilities. The licensure track prepares graduates for an entry-level ("A") license in birth-kindergarten (B-K) education. Admission to and retention in the Child and Family Development major, in either the licensure or non-licensure track, requires a GPA of at least 2.5.

Program Objectives. Graduates of the program are prepared to: apply their understanding of the various stages of growth and development of young children, the unique patterns with which children progress through these stages, and the factors that distinguish typical from atypical development; collect data on children's individual development and effectively access and utilize screening and assessment procedures for children with special needs; design, adapt, implement, and evaluate developmentally appropriate learning environments for children from birth through kindergarten; work collaboratively with families and with interdisciplinary teams from agencies that serve young children and their families; and demonstrate positive attitudes toward children and families and a strong commitment to continuous lifelong study of young children.

B-K LICENSURE: CHILD AND FAMILY DEVELOPMENT

Requirements. This major requires 124-128 semester hours as follows:

General Education (31-35 hours). Course options are listed on the program's Academic Planning Worksheet. Course selections must be approved by the student's major advisor.

Child and Family Development (27 hours)
CHFD 2111 Child Study: Interpreting Children's Behavior (3)
CHFD 2113 Infant and Early Years (3)
CHFD 2115 Education of the Young Child (3)
CHFD 2412 Practicum I: Observing and Recording Children's Behavior (3)
CHFD 2416 Practicum II: The Child and the Community (3)
CHFD 3112 Approaches to Preschool Education (3)
CHFD 3113 Parent Education (3)
CHFD 3115 Learning and Development (3)
CHFD 3412 The Family & Community (Birth to 3 Years) (3)

Professional Education (30 hours)
EDUC 2100 Intro to Education and Diversity in Schools (3)*
SPED 2100 Introduction to Students with Special Needs (3)*

**Corequisite courses EDUC 2100 and SPED 2100 should be taken during a student's sophomore year; both must be completed with a grade of C or better to qualify for admission to the Teacher Education Program.*

Admission to Teacher Education and advisor's approval are required in order to register for any of the following courses:

SPED 4111 Issues in Early Intervention for Children with Disabilities (3)
SPED 4112 Assessment of Young Children with Disabilities: B-K (3)
SPED 4210 Methods in Early Intervention: B-K (3)
CHFD 4410 Student Teaching/Seminar: B-K Child and Family Development (15)**

***Enrollment in CHFD 4410 requires admission to student teaching through the College's Office of Field Experiences*

Related Courses (15 hours)
EIST 4100 Computer Applications in Education (3)
SOCY – Two approved SOCY courses related to the Family Theme (6)
PSYC – Two approved PSYC courses at or above the 3000 level that relate to cognitive, social, and/or personality development (6)

Elective Courses (13-17 hours)
These courses must be approved by the student's advisor in Child and Family Development.

MAJOR IN CHILD AND FAMILY DEVELOPMENT (Non-Licensure Track)

Requirements. This major requires 124-128 semester hours as follows:

General Education (31-35 hours). Course options are listed on the program's Academic Planning Worksheet. Course selections must be approved by the student's major advisor.

Child and Family Development (42 hours)
CHFD 2111 Child Study: Interpreting Children's Behavior (3)

CHFD 2113 Infant and Early Years (3)
CHFD 2115 Education of the Young Child (3)
CHFD 2412 Practicum I: Observing & Recording Children's Behavior (3)
CHFD 2416 Practicum II: The Child and the Community (3)
CHFD 3112 Approaches to Preschool Education (3)
CHFD 3113 Parent Education (3)
CHFD 3115 Learning and Development (3)
CHFD 3412 The Family & Community (Birth to 3 Years) (3)
CHFD 3416 Internship in Child & Family Dev (12)***
CHFD 3619 Senior Seminar in Child & Family Dev (3)***

****Enrollment in CHFD 3416 and CHFD 3619 requires admission to the internship through the CHFD program*

Related Courses (18 hours)

EIST 4100 Computer Applications in Education (3)
SOCY – Two approved SOCY courses related to the Family Theme (6)
PSYC – Two approved PSYC courses at or above the 3000 level that relates to cognitive, social, and/or personality development (6)
One approved course in any one or two of these areas: nursing, anthropology, creative arts, social work, or psychology (3)

Elective Courses (25-29 hours)

These courses must be approved by the student's advisor in Child and Family Development.

Academic Advising. Students who intend to major in Child and Family Development and to earn B-K licensure are classified as Child and Family Development majors. They are assigned a major advisor within the Child and Family Development Program, who helps them select appropriate coursework for their major. To be admitted to the Teacher Education Program in the Birth to Kindergarten licensure program, students must have completed an application, attained a *C* or better in EDUC 2100 and SPED 2100, passed all three parts of the Praxis I test, and attained an overall GPA of at least 2.5 in at least 45 semester hours of coursework. Applications are available from and are to be returned to TEAL for admission to the Teacher Education Program in that typically occurs at the end of the sophomore year. Students who intend to major in Child and Family Development without earning B-K licensure are assigned a major advisor within the Child and Family Development Program as well. Course selections for each subsequent semester must be approved by the student's advisor in Child and Family Development. Assignment of the student's major advisor is the responsibility of the undergraduate coordinator of the Department of Special Education and Child Development (SPCD).

MINOR IN CHILD AND FAMILY DEVELOPMENT

Students who have a GPA of 2.5 or better may elect a minor in Child and Family Development. A minor requires 18 semester hours: CHFD 2111, CHFD 2113, CHFD 2115, CHFD 3115, and six semester hours of child and family development electives.

BACHELOR OF ARTS: SPECIAL EDUCATION

The B.A. program in Special Education includes a choice of one of two licensure areas: the (1) Special Education: General Curriculum license or the (2) Special Education: Adapted Curriculum license. The Special Education: General Curriculum license qualifies graduates for an entry-level Standard Professional I license to teach children with special needs in grades K-12 with milder disabilities who will take the North Carolina standard end of year accountability test with or without modifications. The Special Education: Adapted Curriculum license qualifies graduates for an entry-level Standard Professional I license to teach children with special needs in grades K-12 with more severe disabilities who will take an alternative assessment for the North Carolina standard end of year accountability test.

Program Objectives. Graduates of the program are prepared to: provide individually planned, systematically implemented, and carefully evaluated instruction for students with special needs; provide educational services to students with special needs in general classrooms, resource classrooms, and other educational settings; and help students with special needs achieve the greatest possible personal self-sufficiency and success in present and future environments. Graduates of the program are prepared to meet the 10 INTASC Standards for new teachers in Content Pedagogy, Student Development, Diverse Learners, Multiple Instructional Strategies, Motivation and Management, Communication and Technology, Planning, Assessment, Reflective Practice, and School and Community Involvement.

Requirements. The major in Special Education leading to the B.A. degree requires 120 semester hours as follows:

General Education (31-35 hours). Course options are listed on the program's Academic Planning Worksheet. Course selections must be initially approved by the student's Pre-Education advisor in the Office of Student Academic Services and finally approved by the student's major advisor after admission to the Teacher Education Program in Special Education. General Education requirements may also be met through the "Articulation Agreement" with North Carolina Community Colleges.

Professional Education (61 hours)

EDUC 2100 An Introduction to Education and Diversity in Schools (3)*
SPED 2100 Introduction to Students with Special Needs (3)*

**Corequisite courses EDUC 2100 and SPED 2100 should be taken during a student's sophomore year; both must be*

completed with a grade of C or better to qualify for admission to the Teacher Education Program in Special Education.

Admission to Teacher Education and advisor's approval are required in order to register for any of the following courses.

Courses required by both licensure areas:

CHFD 3115 Learning and Development (3) or
EDUC 4290 Modifying Instruction for Learners with Diverse Needs (3)
EIST 4100 Computer Applications in Education (3)
EXER 3152 Health and Safety Issues in Middle and Secondary Schools (2)
EXER 3228 Integrating Physical Activity and Movement in Elementary Schools (2)
EXER 3229 Teaching Health and Safety to Elementary School Learners (2) or
MDSK 3160 Learning and Development: Birth through Adolescence (3) or
PSYC 2120 Child Psychology (3) or
PSYC 2121 Adolescent Psychology (3)
READ 3226 Teaching Reading to Intermediate Grade Learners (W) (3) or
READ 3255 Integrating Reading Across the Content Areas (W)
SPED 3100 Introduction to General Curriculum for Special Needs Learners (3)
SPED 3173 Special Education Assessment (3)
SPED 3175 Instructional Planning in Special Education (3)
SPED 4170 Special Education Consultation and Collaboration (W) (3)
SPED 4270 Classroom Management (3)

Courses specific to the General Curriculum license:

SPED 4272 Teaching Mathematics to Learners with Special Needs (3)
SPED 4275 Teaching Reading to Learners with Special Needs (3)
SPED 4277 Teaching Writing to Learners with Special Needs (3)
SPED 4475 Student Teaching/Seminar: K-12 Special Education: General Curriculum (15)**

Courses specific to the Adapted Curriculum license:

SPED 4271 Systematic Instruction in the Adapted Curriculum (3)
SPED 4273 Life Skills Instruction (3)
SPED 4274 General Curriculum Access and Modifications (3)
SPED 4316 Transition and Service Delivery (3)
SPED 4476 Student Teaching/Seminar: K-12 Special Education: Adapted Curriculum (15)**

***Enrollment in SPED 4475 or SPED 4476 requires admission to student teaching through the College's Office of Field Experiences*

Elective (6-10 hours)

Academic Advising. Freshmen and sophomores who intend to major in Special Education are classified as Pre-Education students in Special Education. They are assigned an advisor in the College's Office of Teacher Education, Advising, and Licensure (TEAL), who helps them select appropriate General Education and Second Academic Concentration courses and who helps them meet the requirements for admission to teacher education. To be admitted to the Teacher Education Program in Special Education, students must have completed an application by March 1st, attained a *C* or better in EDUC 2100 and SPED 2100, passed all three parts of the Praxis I test, and attained an overall GPA of at least 2.5 in at least 45 semester hours of coursework. Applications are available from and are to be returned to TEAL for admission to the Teacher Education Program in Special Education that typically occurs at the end of the sophomore year. Students are then assigned a major advisor in special education who helps them plan the remainder of their program of study including selection of one of the two licensure areas. Course selections for each subsequent semester must be approved by the student's advisor in special education. Assignment of the student's major advisor is the responsibility of the undergraduate coordinator of the Department of Special Education and Child Development (SPCD).

Department of Educational Leadership

http://education.uncc.edu/eart

Chair: *D. Hancock*
Faculty: *R. Algozzine, J. Bird, M. Dunaway, C. Flowers, A. Friedman, J. Gretes, R. Hartshorne, D. Kim, R. Lambert, D. Lee, J. Lim, C. Lock, J. Lyons, A. McColl, G.. Mitchell, E. Porfeli, J. Queen, C. Wang, W. White*

Please see the *UNC Charlotte Graduate Catalog* for graduate programs and degrees related to the Department of Educational Leadership.

Support Offices and Special Resources

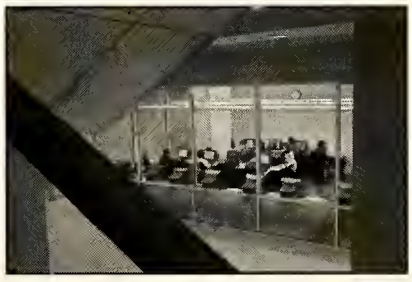
THE OFFICE OF TEACHER EDUCATION ADVISING AND LICENSURE (TEAL)

http://education.uncc.edu/teal

Located in COED 119, this office serves all students involved in teacher education programs. The staff, including a director and three full-time academic advisors, is responsible for:

- Promotion of Teacher Education programs and recruitment of students prior to their admission to UNC Charlotte
- Collaboration with Pre-Education students and advisors at community colleges in North Carolina
- Orientation and academic advisement of pre-education students prior to their admission to a specific Teacher Education Program (which typically occurs during their sophomore year)
- Collaboration with Arts and Sciences departments concerning admission to Teacher Education Programs when those departments have teacher education tracks or degrees
- Academic support services for both students and their faculty advisors as students admitted to a teacher education program progress through their programs, complete student teaching, and apply for licensure
- Management of all applications for teacher licensure
- Follow-up contacts with graduates for purposes of both program and product evaluation.

In collaboration with academic departments involved in teacher education, the Office of Teacher Education Advising and Licensure is the College of Education's central source of information about academic program requirements; criteria and procedures for admission to a specific teacher education program; student advising before admission to teacher education; schedules and applications for taking Praxis I and Praxis II examinations; requirements and procedures for obtaining licensure in North Carolina (or in other states that have reciprocity agreements with North Carolina), including the state's new licensure requirements for demonstration of advanced technology competencies; and final audits to ensure completion of all program and licensure requirements.



THE OFFICE OF FIELD EXPERIENCE (OFE)

http://education.uncc.edu/ofe

Located in COED 139, this office provides support services for school-based clinical experiences that students complete for courses and during year-long internships and student teaching. Field experiences -- observing, interacting with, and teaching children and youth -- are a critical part of all undergraduate teacher education programs at UNC Charlotte. Early clinical experiences are required in specific courses and described in course syllabi. These field experiences continue throughout a student's program, progressing from observation and analysis to planning and implementing instruction to assessing learning outcomes with PK-12 students. They culminate in a 15-week, full-time student teaching experience after completion of all other course work.

SPECIAL FACILITIES AND RESOURCES

Facilities and Resources. Examples that support the work of both faculty and students in undergraduate teacher education programs include:

- The College of Education Building, opened in December 2004, includes *model classrooms* for reading and language arts; science and mathematics; and social studies.
- On the ground floor of the College of Education Building are *two computer classrooms* and *two open computer labs.*
- The College of Education Building includes a student lounge and an undergraduate student study room.
- The *Teacher Education Learning Community* is a two-year program in Charles F. Lynch Hall (formerly Cypress Hall) for students who wish to become teachers. Community members participate in social activities, community service, professional development activities, and have the opportunity to take some general education classes as a cohort group. (*http://education.uncc.edu/coe/freshman/FLC_FAQS.pdf*)
- The College of Education has partnerships with *seven Professional Development Schools* in the region, public schools that work closely with the College to provide excellent clinical experience opportunities.
- The Atkins Library supports teacher education programs through a large children's literature collection on the 3rd floor, curriculum and instructional materials on the 2nd floor (http://library.uncc.edu/cimc); hotlinks from Jasmine, the online catalog, to curricular support materials such as Primary Search in EBSCO host which provides full text for over 50 children's magazines (http://library.uncc.edu/electronic).
- *Media Services* in Atkins Library, maintains an extensive collection of audiovisual equipment and provides graphic and television production services to support instruction.
- The *Center for Math, Science, and Technology Education* in COED 222 sponsors a wide variety of programs and projects that involve preservice and inservice teachers and that are designed to enhance the quality of instruction in mathematics, science, and technology for both pre-college and university students. (http://education.uncc.edu/cmste)
- The *Office of Educational Outreach,* in COED 162, fosters collaborative relationships between schools and UNC Charlotte by developing, supporting, and publicizing activities and projects that involve UNC Charlotte students and faculty in public school

systems throughout the University's service region. (http://education.uncc.edu/oeo)

The NC Teaching Fellows Program. Please see the Honors College section of this *Catalog*.

Undergraduate Student Organizations and Awards. Examples of organizations that are especially relevant to undergraduate students in teacher education programs include:

- The *Student National Education Association (SNEA)*, affiliated with the North Carolina Association of Educators (NCAE) and the National Education Association (NEA)
- The *Student Council for Exceptional Children (SCEC),* affiliated with the Council for Exceptional Children (CEC)
- The *College Middle Level Association* promotes excellent teaching in the middle grades and support for middle grades teacher candidates.
- The *Omicron Pi Chapter of Kappa Delta Pi*, an international honor society for students in education

Examples of awards and scholarships that recognize the achievements of undergraduate students in teacher education programs include:

- *The Teacher Education Award*, presented annually to two seniors who have demonstrated leadership and scholarship and who plan to teach
- *The Phi Kappa Phi Scholar Award*, presented annually to a junior majoring in a program in the College of Education who demonstrates outstanding leadership in an academic discipline and in research or independent study
- *The Military Order of the Purple Heart Award,* presented annually by the American Association of Colleges for Education to two juniors majoring in programs in the College of Education who have shown scholarly achievement, teaching ability, and concern for the educational rights of children with disabilities
- *The North Carolina Alpha Chapter of Alpha Delta Kappa Memorial Scholarship*, awarded annually to a student who has been admitted to a teacher education program and demonstrated both outstanding academic performance and a commitment to teaching
- *The Alma and Sharon Goudes Educational Scholarship,* presented annually to highly capable men and women who have demonstrated their intention to teach English and/or mathematics in middle or secondary schools
- *The Bertha and Irvin Fishman Award,* presented annually to an individual with a strong academic record who plans to teach at the middle school level
- *The Ronald J. Anderson Memorial Scholarship,* presented annually to individuals with strong academic achievement who have overcome significant physical disability

More information about these organizations and awards for undergraduate students in teacher education is available on the web at http://studentorgs.uncc.edu and at http://education.uncc.edu/teal/fa_teachers.htm, as well as in the Office of Teacher Education Advising and Licensure (TEAL) in COED 119.

William States Lee College of Engineering

www.coe.uncc.edu

Dean: *Robert Johnson*
Associate Dean: *Ronald Smelser*
Assistant Deans: *Patricia Tolley, Jack Stein*

The William States Lee College of Engineering has adopted a vision that:

- The College is ***the engineering college of first choice*** for students, faculty, staff, and industry partners, discovering, integrating, applying and disseminating knowledge.

The College nurtures ***collaborative and friendly learning*** communities in which students, faculty, staff and industry partners can succeed and are involved in the continuous assessment and improvement of our programs. Student development, faculty development, and resource and community development are guided by the principle that they should ***enhance our learning environment*** and promote our institution.

The Lee College offers baccalaureate degree programs in Engineering and Engineering Technology. On the graduate level, the College offers programs leading to master's degrees in Engineering and Engineering Management; the Ph.D. in Electrical Engineering and in Mechanical Engineering; an interdisciplinary Ph.D. in Infrastructure and Environmental Engineering; and, in cooperation with North Carolina State University, a program leading to the Ph.D. degree in Civil Engineering *(see the Graduate Catalog).*

The College is comprised of the Departments of Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical Engineering and Engineering Science, and Engineering Technology.

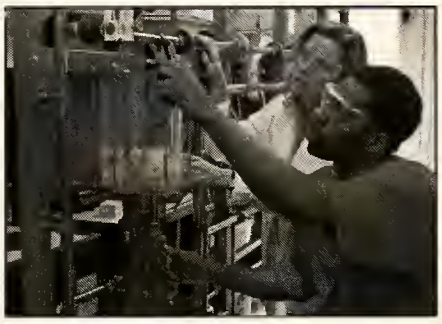
Engineering Programs. The baccalaureate programs in engineering offer a professional engineering education that can be used as the foundation for several different career objectives: careers as professional engineers in industry, business, or consulting; graduate study to prepare for careers in research, development, or teaching; and a more general and more liberal engineering education with the objective of keeping a variety of career avenues open.

Whatever the career objective of the student, a sound engineering educational program ensures their graduates have: (a) an ability to apply knowledge of math, science and engineering; (b) an ability to design and conduct experiments/analyze and interpret data; (c) an ability to design a system, component, or process; (d) an ability to function on multi-disciplinary teams; (e) an ability to identify, formulate, and solve engineering problems; (f) an understanding of professional and ethical responsibility; (g) an ability to communicate effectively; (h) an ability to evaluate the impact of technology in a global/societal context; (i) an appreciation for lifelong learning; (j) knowledge of contemporary issues; and (k) an ability to use the techniques, skills, and modern tools for engineering practice. The course of study will involve the humanities, social sciences, physical sciences, mathematics, and engineering sciences. The student expecting to accept employment in industry may emphasize the engineering design and engineering science aspects of his or her program, while the student preparing for graduate study might emphasize the mathematics and science aspects. Some engineering graduates ultimately take on executive and management responsibilities in industries and firms that are based upon engineering products and engineering services. Such students may choose to construct an elective option in their program that includes business

administration and economics offerings and other courses to strengthen their communication skills.

Engineering students are strongly encouraged to pursue the requirements for registration as a Professional Engineer. The first step in the registration process is the successful completion of the Fundamentals of Engineering (FE) Exam. Students are encouraged to take this exam during their senior year. Additional requirements for professional licensure subsequent to graduation include the accumulation of at least four years of progressive engineering experience and successful completion of the Professional Engineer Examination (PE Exam). Students who complete the Cooperative Education Program or who complete their Master's degree only need three years of progressive engineering experience to be eligible to take the PE Exam.

Engineering Technology Program. Engineering technology is the profession in which knowledge of mathematics and natural sciences gained by higher education, experience, and practice is devoted primarily to the implementation and extension of existing technology for the benefit of humanity. Engineering technology education focuses primarily on the applied aspects of science and engineering aimed at preparing graduates for practice in that portion of the technological spectrum closest to the product improvement, manufacturing, and engineering operational functions.



Engineering technology programs are characterized by their focus on application and practice and by their approximately 50/50 mix of theory and laboratory experience.

Graduates of the engineering technology program are recruited by most major technological companies in the U.S. They are employed across the technological spectrum but are better suited to areas that deal with application, implementation, production, and construction. Technical sales and customer services fields also account for many placements.

Engineering technology students are strongly encouraged to pursue the requirements for registration as a Professional Engineer. The first step in the registration process is the successful completion of the Fundamentals of Engineering (FE) Exam. Graduates are encouraged to take this exam after completing four years of work experience under a Professional Engineer (PE). Additional requirements for professional licensure following graduation include the accumulation of at least eight years of progressive experience and successful completion of the Professional Engineer Exam. Students who complete the Cooperative Education Program or who complete their Master's degree only need seven years of progressive engineering experience to be eligible to take the PE Exam.

ACADEMIC PROGRESSION REQUIREMENTS AND DISCONTINUANCE CONDITIONS FOR:

I. Bachelor's Degree Programs and Advising in the College of Engineering

Students may be admitted to one of the four College of Engineering departments: Civil and Environmental Engineering (CEGR), Electrical and Computer Engineering (EEGR and CPGR), Mechanical Engineering and Engineering Science (MEGR), and Engineering Technology (ET). Students may also be admitted as ENGR (*engineering undecided),* or ETGR (*engineering technology undecided)* majors.

Engineering Undecided (ENGR) and *Engineering Technology Undecided* (ETGR) are individualized advising programs for students who qualify for admission to an engineering or engineering technology major but who have not decided which program they desire. Students may change their classification to a specific major once they make a decision. Both ENGR and ETGR students should make such a decision no later than the completion of their freshman year.

Students are expected to follow the advice and recommendations of their faculty advisors and are expected to know and follow all pre-requisite, co-requisite, and progression requirements of their program. Persistent attempts to circumvent that advice and guidance shall be grounds for discontinuance.

Students must demonstrate that they are making satisfactory progress toward completion of their major degree. They are in violation of this requirement and subject to discontinuance if they have two consecutive semesters of unsatisfactory progress.

II. Freshman Year Requirements

All new freshman students are initially advised by a central office within the College of Engineering. Students are eligible for transfer to their major department for further advising once they have achieved the following:

1. completion of all non-elective courses in their freshman year curriculum with grades of *C* or better
2. a minimum cumulative grade point average (GPA) of 2.0 for all courses taken

III. Sophomore Through Senior Year Requirements

In addition to the University requirements for

continued enrollment, students must maintain a major cumulative GPA of 2.0 for all courses in the departmental curriculum taught by the College. Failure to meet this requirement for two consecutive semesters will result in suspension from the College of Engineering.

IV. Requirements for Readmission to the College after Discontinuation

An undergraduate student who has been discontinued for failure to satisfy the College requirement for continuation stated above, but who nonetheless meets the conditions for continued enrollment in the University, will be ineligible for readmission to the College until one of the following occurs:

1. An appeal is accepted through the College of Engineering
2. The student completes an Associate of Science (AS) degree for engineering or an Associate of Applied Science (AAS) degree for engineering technology
3. The student elects to use the Two-Year-Rule

A student who has been suspended by the University must follow University guidelines for appeal. Readmission to the College after discontinuation or suspension is not automatic. An application for readmission must be made by the student and approved by the College/department. Students who are readmitted after discontinuation by the College, suspension by the University, or under the Two-Year Rule must meet requirements for continued enrollment appropriate to their individual situation. These requirements are specified in a "Continuation Agreement" that is mutually agreed upon and signed by the student and his/her appropriate advisor. The consequences of failure to meet the requirements of the agreement may be articulated in the agreement itself. However, if these consequences are not included in the agreement, failure to meet the requirements will automatically result in the student's discontinuation from the College.

SPECIAL COLLEGE PROGRAMS

MAPS – Maximizing Academic and Professional Success. The College's nationally recognized MAPS program assists students in developing the personal, academic, and professional skills needed for success. The program includes peer mentoring in individual or small group sessions, Supplemental Instruction (SI), tutoring, workshops and study groups. SI and/or tutoring is available for courses such as calculus, chemistry, and physics, and for sophomore and junior engineering and engineering technology courses. Assessment results indicate that students who regularly participate in MAPS perform well academically and are much more likely to graduate from the College.

Freshman Learning Community (FLC). The FLC is home to approximately 200 College of Engineering freshmen who live and interact in a single residence hall. During the fall semester, FLC students take classes together. Students are assigned a peer mentor, and SI is provided by the MAPS Program for a variety of freshman courses. Other special events such as special study nights, community service projects, and social activities are also available to participants.

Student Leadership Academy. The Leadership Academy is an optional extracurricular program designed to develop the leadership potential of College of Engineering students through a series of weekend retreats with other students, faculty and industry partners. Top industry executives help facilitate specific activities providing some real-world perspective on being a successful leader in business and in the community.

Cooperative Education (Co-op) Program. Students may obtain practical work experience while pursuing their degree by participating in cooperative education whereby a student alternates semesters of full-time academic study with semesters of full-time work experience in industry. Students may also do back-to-back Co-op experiences if their fall or spring Co-op session is combined with a summer session. The work experience is under the direction of the student's major department and is closely related to his or her field of study. Students who fulfill all requirements of the Co-op program receive transcript notation, can earn up to three credit hours for a technical elective, and will receive partial credit toward the professional practice requirement for registration as a Professional Engineer.

To be eligible for the Co-op program, a student must have completed at least 24 credit hours at UNC Charlotte including a number of specified courses with a minimum GPA of 2.5. A transfer student is expected to have completed at least 12 hours at UNC Charlotte.

For an undergraduate to be officially designated as a Co-op student, he or she must participate in at least three full-time semesters of work experience (three work sessions and three seminar courses). Consequently, participation in Co-op Education usually means that graduation can be delayed up to one year. However, students who participate in Co-op traditionally are more highly recruited at higher starting salaries than other students.

Students interested in learning more about the advantages and opportunities of participating in this program should contact the College's Faculty

Associate for Student Professional Development or the University Career Center.

Domestic Internships. A number of opportunities for non-credit internships, called 49erships, exist for students at local and regional employers. Internships for College of Engineering students are almost always paid positions. A minimum of 80 work hours need to be completed in no less than five weeks for one semester to successfully complete the program. Fall and Spring 49erships are part-time. Summer 49erships may be full- or part-time. Full-time students who are in good University standing, have completed 24 credit hours, and have a 2.0 minimum cumulative GPA are eligible.

Internships do not offer academic credit, but students do receive transcript notation. Approval for enrollment must be arranged before the student begins the work experience, and students pay a course registration fee. Students may begin this program during their sophomore year. Transfer students must complete 12 credit hours at UNC Charlotte before making application for the program.

Students interested in learning more about the advantages and opportunities of participating in this program should contact the College's Faculty Associate for Student Professional Development or the University Career Center.

International Internships. The College's International Exchange program provides opportunities for overseas study, research, and/or an industrial experience. In many cases, students who meet eligibility requirements receive special scholarships and/or grants to help defray the cost of these programs.

Fundamentals of Engineering (FE) Exam Review. The first step in professional licensure is the FE exam, which engineering students take their senior year. To encourage and prepare students to take and successfully pass this national exam, the College offers free review opportunities each fall and spring semester. The materials focus on technical subjects and test-taking strategies.

CONTINUING ENGINEERING STUDIES

The College of Engineering sponsors various special educational programs for practicing engineers, technologists, technicians, and others, in addition to its regular academic degree programs and courses. These include conferences, short courses, seminars, and other continuing education programs designed to aid those practicing in the technical professions and occupations to keep abreast of the latest developments in the rapidly expanding technology. For more information, contact the Office of Continuing Education, Extension, and Summer Programs.

Department of Civil and Environmental Engineering

www.ce.uncc.edu

Chair and Professor: *D. Young*
Professors Emeritus: *D. Bayer, J. Evett, L. E. King*
Duke Energy Distinguished Professor: *H. Inyang*
Professors: *J. Graham, R. Janardhanam, J. Wu*
Associate Professors: *J. Bowen, J. Gergely, H. Hilger, M. Kane*
Assistant Professors: *J. Amburgey, J. B. Anderson, D. Boyajian, S. Chen, J. Daniels, V. Ogunro, S. Pulugurtha, K. Warren, D. Weggel*

The program in Civil Engineering is accredited by:

Engineering Accreditation Commission of the
Accreditation Board for Engineering and Technology
111 Market Place, Suite 1050
Baltimore, MD 21202
Telephone: (410) 347-7700

The objectives of the undergraduate program in Civil Engineering are to:

(a) provide students with the latest social, mathematical, scientific and engineering educational experiences required to access needs, define problems, evaluate alternatives, propose appropriate solutions and implement designs;

(b) provide students with the social science and management educational experiences required to effectively work in teams, communicate recommendations and manage the implementation of their designs; and

(c) promote concern for environmental, societal and global ramifications of engineering solutions, the value of the profession and its ethics, the opportunities provided by graduate studies, and the necessity of life-long learning.

These objectives are accomplished through a flexible curriculum and through interactions with other departments and colleges of the University and with the professional community.

A major role of civil engineers is to focus scientific and technological skills on the creation of physical facilities, the engineering and construction of which advance society toward such basic goals as economic development, environmental protection, and social well-being. Civil engineers may be

involved in analysis, design, construction, and monitoring of: buildings, bridges, dams, and other structures; water resources for urban use, industry and land reclamation; systems for water transmission and river control; water quality control systems for purification and waste treatment; transportation systems including highways, mass transit, airports, railroads, pipelines, canals, and harbor facilities; solutions for environmental problems including air pollution, ground pollution, water pollution, noise pollution, ecological effects, land development, and urban and regional planning; and in subsurface foundation systems. Civil engineers must bring about a satisfactory blending of constructed facilities with the natural and social environments, creating an optimum relationship between humans and the environment while helping safeguard the health, safety, and welfare of the public.

The Department offers a Bachelor of Science in Civil Engineering (B.S.C.E.) degree, a Master of Science in Civil Engineering (M.S.C.E.) degree, a Master of Science in Engineering (M.S.E.) degree, and a Doctor of Philosophy (Ph.D.) degree in Infrastructure and Environmental Systems. Additionally, doctoral studies leading to the Doctor of Philosophy (Ph.D.) degree are available through a cooperative arrangement with North Carolina State University. For information about the master's programs, see the *UNC Charlotte Graduate Catalog*.

Students may plan early in their undergraduate careers for continuation of their engineering studies beyond the first degree. The large number of fields of graduate study that follow the curriculum offered by the Department of Civil and Environmental Engineering influence how each student plans his/her undergraduate program of study. Twenty-one hours of technical electives allow flexibility for study in specific areas. Each student may design a technical elective program with his or her advisor's approval in order to achieve individual goals and follow a desired track.

Additionally, students may take nine hours (three "Optional Courses") beyond the BSCE requirements from prescribed menus in each of the areas of Environmental, Geotechnical, Structural, and Transportation Engineering to earn a Department-issued "Area of Concentration." Although currently under development, a fifth area of concentration, in Construction Engineering, is expected to be available by the time this *Catalog* is printed.

Qualified students may apply for early-entry into the graduate program in Civil Engineering during their junior or senior year. If accepted, students may take these optional courses for graduate credit and to begin work on their master's degree while completing their undergraduate degree. Additionally, early-entry students may apply up to 6 credits of approved graduate coursework as electives toward their undergraduate degree (double count).

Early-Entry to Master's Program in Civil Engineering

1.) A student may be accepted into the early-entry program at any time after completion of at least 75 semester hours of undergraduate work applicable to an appropriate degree. Admission must be approved by the Department of Civil and Environmental Engineering. Full admission to the graduate program is conditional pending the awarding of the undergraduate degree.

2.) In order to be accepted into the program a student must have at least a 3.2 overall grade point average and a 3.2 grade point average in the student's major. The successful applicant must have taken the appropriate standardized test and earned acceptable scores.

3.) While in the early-entry program, a student must maintain a 3.0 overall grade point average through completion of the baccalaureate degree in order to remain in the graduate program.

4.) Students accepted into the early-entry program will be subject to the same policies that pertain to other matriculated graduate students. Early-entry students must finish their undergraduate degree before they complete 15 hours of graduate work.

BACHELOR OF SCIENCE IN CIVIL ENGINEERING (B.S.C.E.)

Note: This curriculum became effective Fall 2004. Students who entered *the program prior to Fall 2004 should refer to a previous Catalog or contact the Department office for their program of study. Since the curriculum changes periodically, students should contact the Department office for the latest information concerning this curriculum.*

A major in Civil Engineering leading to the B.S.C.E. degree consists of 128 credit hours. Specific requirements are:

English	6
Technical Communications	3
Humanities and Social Science Electives	15
Mathematics	15
Physics	8
Chemistry	4
Science Elective	3
Engineering	4
Electrical or Mechanical Engineering	3
Engineering Science	6
Departmental Requirements	40
Open Technical Electives	9
Civil Engineering Technical Electives	12
Total	128

Social science and humanities electives must be chosen both to satisfy University General Education requirements and to meet the objectives of a broad education consistent with the educational goals of the profession. To avoid taking "extra" humanities/social science electives, students must select their electives carefully after consulting with their faculty advisor.

The science electives must be chosen from an approved list of physical, life, or earth sciences and must complement the student's overall educational plan.

Technical electives allow flexibility for study in specific areas, and each student may design a technical elective program with the advisor's approval in order to achieve an individual goal and follow a desired track. Three "open" technical (TECH) electives may be selected from the areas of engineering, mathematics, science, business and communications. Four Civil Engineering technical (CEGR TECH) electives must be selected from upper-division Civil Engineering courses.

CURRICULUM OUTLINE: B.S.C.E. DEGREE
(effective Fall 2004)

Freshman Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
MATH 1241 Calculus I	3	MATH 1242 Calculus II	3
CHEM 1251 Chemistry I	3	PHYS 2101 Dynamics	3
CHEM 1251L Chemistry Lab	1	PHYS 2101L Physics Lab	1
ENGL 1101 English I	3	ENGL 1102 English II	3
ENGR 1201 Intro to Engineering I	2	ENGR 1202 Intro to Engineering II	2
LBST 1101, 1102, 1103, 1104, or 1105 General Ed	3	Social Science – General Ed	3
TOTAL	15		15

Sophomore Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
MATH 2241 Calculus III	3	MATH 2171 Differential Equations	3
PHYS 2102 Electricity	3	CEGR 2104 Surveying & Site Design	3
PHYS 2102L Physics Lab	1	ENGL 2116 Technical Writing (W)**	3
CEGR 2101 Drawing	2	MEGR 2144 Solid Mechanics	3
CEGR 2102 Engineering Economics	3	CEGR 2154 Design Project Lab (O)**	2
MEGR 2141 Statics (Engr. Mech. I)	3	Science Elective	3
LBST 2101 General Ed	3		
TOTAL	18		17

Junior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
CEGR 3143 Hydraulics & Hydrology	3	CEGR 3161 Transportation I	3
CEGR 3141 Environmental I	3	CEGR 3153 Transportation Lab (W)**	1
CEGR 3278 Geotechnical I	3	CEGR 3255 Structures & Materials Lab (W)**	1
CEGR 3122 Structures I	3	CEGR Electives (2)	6
CEGR 3155 Environmental Lab (W)**	1	STAT 3128 Probability & Statistics for Engineers	3
CEGR 3258 Geotechnical Lab (W)**	1	Engineering Elective (ECGR 2161 Circuits, MEGR 3121 Dynamics, or MEGR 3111 Thermodynamics	3
LBST 2102 Gen Ed	3	Optional: Course A*	(3)
TOTAL	17		17

Senior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
CEGR 3201 Systems & Design I	3	CEGR 3202 Systems & Design II	4
CEGR 3221 Structural Steel Design I OR CEGR 3225 Reinforced Concrete Design I	3	CEGR Elective	3
ENGR 3295 Professional Development	1	TECH Electives (2)	6
CEGR Elective	3	Optional: Course C*	(3)
TECH Elective	3		

LBST 2211, 2212, 2213, 2214, 2215 General Ed	3		
Optional: Course B*	(3)		
TOTAL	16		13

Total Required Hours = 128

**Contact the Department office for more information about the optional courses and their use for an undergraduate concentration or for the early-entry Master's program.*

***(W) indicates a writing intensive course; (O) indicates an oral communication course*

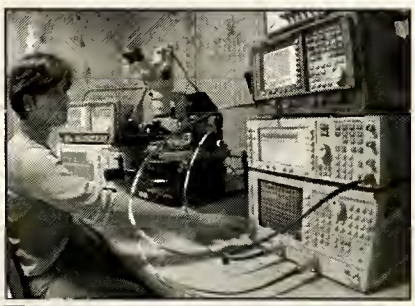
Department of Electrical and Computer Engineering

www.ece.uncc.edu

Chair and Professor: *L. Casperson*
Professors Emeritus: *R. Coleman, R. Greene, D.H. Phillips*
Professors: *S. Bobbio, K. Daneshvar, M. Fiddy, Y. Kakad, V. Lukic, E. Johnson, F. Tranjan, R. Tsu*
Associate Professors: *D. Binkley, J. Conrad, M. Hasan, I. Howitt, B. Joshi, S. M. Miri, A. Nasipuri, R. Sass, E. Stokes, T. Weldon*
Associate Professor Emeritus: *W. Smith*
Assistant Professors: *R. Cox, A. Mukherjee, A. Ravindran, J. Xie*
Faculty Associates: *A. Hege, J. Hudak, E. L. Sheppard*
Laboratory Support: *E. Hill*

The Electrical and Computer Engineering Department provides instruction and research in areas of electrical and computer engineering such as power systems, optoelectronics, digital systems, VLSI design, data communications and networking, automatic control systems, electronics, embedded systems, microelectronics, power electronics, robotics, nanotechnology, and biomedical engineering.

The Department offers a **Bachelor of Science in Electrical Engineering (B.S.E.E.) degree and a Bachelor of Science in Computer Engineering (B.S.Cp.E.) degree.** An eight-semester sequence of courses that is designed to develop the concepts and design and analysis techniques fundamental to the various areas of specializations forms the core of the curricula. Emphasis is placed on the utilization of computers throughout the curricula. Our graduates have a wide range of job opportunities as power engineers, communication engineers, digital design engineers, test engineers, embedded system developers, network engineers, control engineers, project engineers, robotic system engineers, optoelectronic engineers, application engineers, analog engineers, medical product engineers, and process engineers.



Graduate studies in electronics, embedded systems, microelectronics, optoelectronics, computer engineering, VLSI design and testing, signal processing, data communications and networking, power electronics, power systems, and control systems are offered by the Department at the Master's and Ph.D. levels.

Early-Entry to Master of Science Program in Electrical Engineering

1.) A student may be accepted into the early-entry program at any time after completion of 75 semester hours of undergraduate work applicable to an appropriate degree. Admission must be approved by the Department of Electrical and Computer Engineering. The admission is conditional pending the awarding of the undergraduate degree.

2.) In order to be accepted into the Electrical Engineering early-entry program, an undergraduate student must have at least a 3.2 overall grade point average and a 3.2 grade point average in the major. The successful applicant must have taken the appropriate graduate standardized test and achieved acceptable scores.

3.) If an early-entry student is unable to maintain a 3.0 overall grade point average at the end of his/her baccalaureate degree, he/she will be dismissed from the graduate program.

4.) Up to six hours earned at the graduate level may be substituted for required undergraduate hours. (Up to six hours of graduate work may be "double counted" toward both baccalaureate and graduate degrees).

5.) Students accepted into the early-entry program will be subject to the same policies that pertain to other matriculated graduate students. Early-entry students must finish their undergraduate degree before they complete 15 hours of graduate work.

Both the program in Electrical Engineering and the program in Computer Engineering are accredited by:

Engineering Accreditation Commission of the
Accreditation Board for Engineering and Technology
111 Market Place, Suite 1050
Baltimore, MD 21202
Telephone: (410) 347-7700

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING (B.S.E.E.)

The curricula described are subject to change. Please consult with the Chair or the Associate Chair for the latest versions.

A major in Electrical Engineering leading to the B.S.E.E. degree consists of a total of 127 semester credit hours.

The **Program Educational Objectives** are as follows:

- To provide our students the opportunity and the environment to acquire the educational background necessary to pursue professional careers in Electrical Engineering and/or to continue their education toward an advanced degree in the field.
- To provide graduates who have a comprehensive background in mathematics, physical and social sciences, liberal arts, and human values, with in-depth knowledge of the fundamentals of engineering science and Electrical Engineering that perpetuates life-long learning.
- To provide graduates with the tools to pursue successful and long careers in the profession that places ethical conduct as paramount.
- To prepare graduates who can effectively communicate their thoughts and ideas to their surroundings along with the understanding of the impact of electrical engineering on global, societal, and environmental issues.
- To provide graduates who have state-of-the-art computer skills suitable for a modern career in electrical engineering, where computer utilization is an essential tool.

The laboratory courses are designed to: (1) teach the basic techniques of instrumentation; (2) develop skills in communications; and (3) relate the analytical methods developed in the classroom to the performance of real physical systems.

The degree requirements are:

English	6
Liberal Studies	12
Mathematics	15
Physics	10
Chemistry	4
Science or Math Elective	3
Engineering	5
Mechanical Engineering	3
Departmental Requirements	54
Technical Electives	12
Economics	3
Total	127

The *liberal studies electives* must be chosen to satisfy the University General Education requirements and to meet the objectives of a broad education consistent with the educational goals of the profession.

The *science elective* must be chosen from college-level chemistry, physical, or biological science courses. The *math elective* must be chosen from college-level, non-remedial mathematics or statistics courses. This elective course should complement the student's overall educational plan.

The *technical electives* are chosen by students in consultation with their academic advisor. Students can use these electives to: (1) obtain some breadth within electrical engineering by choosing additional advanced courses; (2) obtain significant depth within a particular area of electrical or computer engineering; and (3) prepare for graduate work in electrical or computer engineering. The technical electives must contain at least twelve hours of coursework dealing with engineering science, analysis, synthesis, or design. See Department guidelines for selection of these courses.

Note: All Non-elective freshmen year courses must be completed with C or better prior to enrolling in any junior level courses.

CURRICULUM OUTLINE: B.S.E.E. DEGREE

Freshman Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ENGR 1201 Intro To Engineering Practices & Principles I	2	ENGR 1202 Intro To Engineering Practices & Principles II	2
CHEM 1251 Principles of Chemistry	3	MATH 1242 Calculus II	3
CHEM 1251L Chemistry Lab	1	PHYS 2101 Physics for Science & Engineering I	3
MATH 1241 Calculus I	3	PHYS 2101L Physics Lab I	1
ENGL 1101 English Composition	3	ENGL 1102 Composition & Literature	3
LBST 1101, 1102, 1103, 1104 or 1105	3	LBST 2101 Western Cultural & Historical Awareness	3

Sophomore Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ECGR 2103 Computer Utilization in C++	3	ECGR 2112 Network Theory II	3
ECGR 2111 Network Theory I	3	ECGR 2156 Lab: Instrumentation and Networks	1
ECGR 2155 Lab: Logic & Networks	1	ECGR 2252 Electrical Engineering Design I	2
ECGR 2181 Logic System Design I	3	MATH 2241 Calculus III	3
MATH 2171 Differential Equations	3	PHYS 3141 Introduction to Modern Physics	3
PHYS 2102 Physics for Science & Engineering II	3	LBST 2102 Global & Intercultural Connections	3

Junior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ECGR 3111 Signals and Systems	3	ECGR 3122 Electromagnetic Waves	3
ECGR 3121 Introduction to Electromagnetic Fields	3	ECGR 3132 Electronics	3
ECGR 3131 Fund of Electronics & Semiconductors	3	ECGR 3133 Solid State Microelectronics I –OR– ECGR 3142 Electromagnetic Devices	3
ECGR 3155 Lab: Systems and Electronics	1	ECGR 3156 Lab: Electromagnetic & Electronic Devices	1
ECGR 3157 Electrical Engineering Design II	2	STAT 3128 Probability and Statistics for Engineers	3
ENGR 3295 Professional Development	1	ECGR 3112 System Analysis II –OR– ECGR 3181 Logic System Design II	3
LBST 2211, 2212, 2213, 2214, or 2215	3		

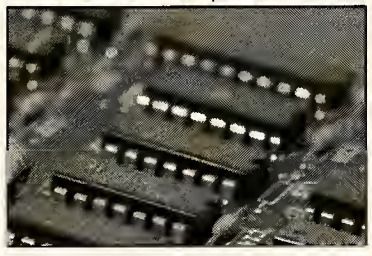
Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ECGR 3253 Senior Design I	2	ECGR 3159 Elec. Engineering Professional Practice	2
ECGR 4123 Analog & Digital Communication **–OR--** ECGR 4124 Digital Signal Processing	3	ECGR 3254 Senior Design II	3
ECGR Senior Elective	3	MEGR 3111 Thermodynamics	3
Technical Electives (2)	6	ECON 2101 Economics	3
Science or Math Elective	3	Technical Electives (2)	6

Total Credit Hours = 127

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING (B.S.Cp.E.)

The curriculum in Computer Engineering leading to the B.S.Cp.E. degree consists of 125 semester credit hours. The **Program Educational Objectives** are as follows:

- Provide our students a solid foundation in the field of computer engineering within an environment that fosters hands-on design and synthesis experience.
- Prepare our students for leadership positions by providing a balanced educational experience with emphasis on communication skills, teamwork, and professional practice, including values and ethics.



- Provide sufficient curriculum flexibility to allow every student to synthesize a program of study that is specific to the students' interests within the diverse field of computer engineering.
- Provide our students sufficient breadth of knowledge to understand the broad relationships of the various areas within engineering, and sufficient depth as a concentration within one of those areas.

The following curriculum became effective for all

students entering the program in the Fall 2006 and thereafter. Students who entered the program prior to Fall 2006 should consult earlier versions of the *UNC Charlotte Undergraduate Catalog* available online or contact the ECE department.

The degree requirements are:

English	6
Liberal Studies	12
Mathematics	15
Physics	8
Chemistry	4
Science or Math Restrictive Elective*	3
Advanced Problem Solving**	3
Engineering	5
Writing Intensive (W) Requirement	3
Restricted Elective***	3
Economics	3
Computer Engineering Requirements	54
Depth Elective Requirements****	6
Total	125

**The Science Restricted Elective must be chosen from college-level chemistry, physical or biological science courses. The Math Restricted Elective must be chosen from college-level, non-remedial mathematics or statistics courses. This elective course should complement the student's overall educational plan.*

***The Advanced Problem Solving course must be chosen from: MATH 2164, 2241, 3116, 3166; OPRS 3111, 3113; or PHYS 3141. This elective course should complement the student's overall educational plan.*

****The Restricted Elective must be chosen from: engineering, computing and informatics, computer science, math, statistics, physics, chemistry, biology, or software and information systems.*

*****For the Depth Elective Requirement, choose two courses from one of the following three areas:*

1. Communication & Signal Processing
   - ECGR 3/4090 Spec Topics (approved case-by-case)
   - ECGR 3112 System Analysis II
   - ECGR 4103 Applied Computer Graphics
   - ECGR 4123 Analog/Digit Communication
   - ECGR 4125 Foundation Optical Engineering
   - ECGR 4139 Digital Communication Systems
   - ECGR 4187 Data Communications
   - ECGR 4422 Random Processes

2. Hardware Systems
   - ECGR 3/4090 Spec Topics (approved case-by-case)
   - ECGR 3133 Solidstate Microelec I
   - ECGR 3182 Digital Logic Dev
   - ECGR 4131 Linear Integrated Micro
   - ECGR 4132 Analog IC Design
   - ECGR 4134 Solidstate Micro II
   - ECGR 4137 Device Electronics for ICs
   - ECGR 4138 El thin Film Mtls Dev.
   - ECGR 4140 Intro VLSI Proc
   - ECGR 4142 Power System Analysis II
   - ECGR 4182 Digital Sys Test
   - ECGR 4188 Adv VLSI Design
   - ECGR 4433 VLSI Systems Design

3. Computer Architecture, Software, and Systems
   - ITCS 2214 Data Structure
   - ITCS 3145 Intro to Parallel Programming
   - ITCS 3166 Distributed Computing Systems
   - ECGR 3/4090 Spec Topics (approved case-by-case)
   - ECGR 4102 Simulation
   - ECGR 4103 Applied Computer Graphics
   - ECGR 4111 Cont. Sys Theo I
   - ECGR 4112 Cont. Sys Theo II
   - ECGR 4161 Intro to Robotics
   - ECGR 4181 Computer Architecture
   - ECGR 4xxx Video Game Design

Note: All non-elective freshmen year courses must be completed with C or better prior to enrolling in any junior level courses.

CURRICULUM OUTLINE: B.S.Cp.E. DEGREE

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
CHEM 1251 Principles of Chemistry	3	ENGL 1102 Writing in the Academic Community	3
CHEM 1251L Principles of Chemistry Lab	1	ENGR 1202 Intro to Engineering II	2
ENGL 1101 Composition	3	ITCS 1215 Introduction to Computer Science II	3
ENGR 1201 Intro to Engineering I	2	MATH 1242 Calculus II	3
ITCS 1214 Intro to Computer Science I	3	PHYS 2101 Physics for Science / Engineering I	3
MATH 1241 Calculus I	3	PHYS 2101L Physics for Science / Engineering I Lab	1

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ECGR 2111 Network Theory I	3	ECGR 2112 Network Theory II	3
ECGR 2181 Logic System Design I	3	ECGR 2156 ECE Lab	1
ECGR 2155 ECE Lab	1	ECGR 3181 Logic System Design II	3
MATH 2171 Differential Equations	3	ECON 2101 Principles of Economics Macro	3
LBST 1101, 1102, 1103, 1104 or 1105	3	MATH 1165 Intro to Discrete Structures	3
PHYS 2102 Physics for Science / Engineering II	3	STAT 2122 Probability and Statistics	3

PHYS 2102L Physics for Science / Engineering II Lab	1		

Junior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ECGR 3111 Signals and Systems	3	ECGR 2255 Digital Design Lab	2
ECGR 3131 Fundamentals of Electronics / Semiconductors	3	ECGR 3123 Data Communication & Network	3
ECGR 3155 Systems & Electronics Lab	1	ECGR 3132 Electronics II	3
ENGR 3295 Professional Development	1	LBST 2102 Global & Intercultural Connections	3
ECGR 3183 Computer Org & Prog Languages	3	Advanced Problem Solving Selection	3
LBST 2101 Western Cultural & Historical Awarenes	3	Science or Math Restrictive Elective	3
LBST 221X	3		

Senior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ECGR 3253 Senior Project I	2	ECGR 3254 Senior Project II	3
ECGR 4101 Embedded Systems	3	ECGR 3159 Professional Practice	2
ECGR 4146 Intro to VHDL	3	ECGR 4124 Digital Signal Processing	3
Depth Elective #1	3	Depth Elective #2	3
English Technical Writing or any 3-hour 2xxx-level (or above) course with a (W) designation	3	Restrictive Elective	3

Total Credit Hours = 125

Department of Engineering Technology

www.et.uncc.edu

Chair and Professor: *A. Brizendine*
Professors Emeritus: *C. Liu, C. Mobley*
Professors: *N. Byars, B. Sherlock, S. Wang*
Associate Professors: *A. Barry, E. Braun, C. James, D. Liou, C. Orozco, R. Priebe*
Assistant Professors: *D. Cottrell, G..B. Gehrig, J. Kimble, S. Kuyath, D. Murphy, D. Sharer, G. Watkins*
Lecturer: *T. Cavalline*
Faculty Associates: *D. Hoch, P. Kabengela, S. Mitchum, T. Nicholas*

Engineering and technical education have undergone considerable change in the last 40 years. The complexities of space exploration, nuclear power, communications systems, environmental control, information processing, transportation systems, fire protection, construction management, and manufacturing have demanded a great increase in the involvement of professional engineers in theoretical and analytical work. This has resulted in a much greater emphasis upon research and development, science, and mathematics in professional engineering curricula. At the same time, after the more complex devices and systems have been engineered, their design, development, and operation require the sophisticated knowledge and skills of what might be called the "applied engineering sciences." Programs dedicated to filling this need exist all over the United States. The aim and content of these programs are distinctly different from professional engineering curricula.

To provide the appropriate distinction from both theoretical-professional engineers and from engineering technicians who are graduated from two-year community and technical colleges, the designation "engineering technologist" is employed to describe the graduates of four-year applied engineering or "engineering technology" curricula. The Engineering Technology Department is committed to producing competent graduates that satisfy the needs of employers in North Carolina and throughout the United States.

The department offers curricula leading to the Bachelor of Science in **Construction Management** (BSCM) and the Bachelor of Science in Engineering Technology (BSET) degrees. In addition to the BSCM, four disciplines of study are available in Engineering Technology: **Civil Engineering Technology** (with emphases in General Civil Engineering Technology or Construction Engineering Technology); **Electrical Engineering Technology** (with

emphases in Electronics Engineering Technology or Computer Engineering Technology); **Fire Safety Engineering Technology;** and **Mechanical Engineering Technology.**

Students may enroll in our programs in several ways: 1) as freshmen; 2) as transfers without an AAS in engineering technology; or 3) as upper division transfers after completing a two-year Associate of Applied Science (AAS) degree in a relevant engineering technology, construction management, or fire protection curriculum at a community or technical college. Incoming students with an AAS degree generally receive Junior class standing, with 64 semester credit hours applied toward the BSET or BSCM degree.

Construction Management and Engineering Technology students learn through applied technical courses and hands-on laboratories where they interact with experienced professors with many years of real-world engineering, design, project management, and product development experience. Graduation with a BS degree in Construction Management (BSCM) or Engineering Technology (BSET) opens the door to many exciting and challenging professional careers. Graduates choose from a variety of exciting career options where they enjoy productive professional careers with exceptional employment rates and excellent salaries.

EMPLOYMENT OPPORTUNITIES FOR GRADUATES

Graduates of our programs can be found in every sector of the global economy. Examples of employment opportunities and examples of recent job titles are provided below for each program.

Civil Engineering Technology graduates find employment in a wide range of positions in construction, surveying, engineering and architectural firms; local, state and national government; environmental and public health agencies; state departments of transportation and highways; and private business and industry. Specific job titles of recent graduates include transportation technician, highway technician, engineer-in-training, materials supervisor, surveying crew chief, civil engineering detailer/designer, office engineer, construction estimator or planner, engineering assistant, project engineer and assistant project manager.

Construction Management graduates plan, direct, and coordinate a wide variety of construction projects, including the building of all types of residential, commercial, and industrial structures, roads, bridges, wastewater treatment plants, and schools and hospitals. Construction managers may oversee an entire project or just part of a project. They often work with or for owners, engineers, architects, and others who are involved in the construction process. Construction managers evaluate and help determine appropriate construction delivery systems and the most cost-effective plan and schedule for completing the project.

Electrical Engineering Technology graduates find employment in many sectors of the economy. Almost any aspect of communications, electronic instrumentation, computer applications, computer networking, electric power generation and distribution, or consumer electronics has a need for graduates with understanding of the applications of electrical technology. A few examples are systems administrator for networked computer systems, systems design for a telecommunications company, avionics control systems for aircraft programs, applications design for HVAC and building power-control systems.

Fire Safety Engineering Technology graduates find employment in numerous areas associated with fire protection to include prevention, suppression, building design and arson investigation, emergency preparedness, safety analysis and mitigation. The FSET program stresses the importance of personal communication skills and the ability to function in a team environment. Some typical job titles of recent graduates include firefighter, arson investigator, fire prevention officer, fire inspector, and fire captain.

Mechanical Engineering Technology graduates design, build, test and maintain a wide variety of machines, cars, jet fighters, and other high-tech devices and systems. Some typical job titles of graduates include computer-aided designer, plant maintenance or production supervisor, manufacturing or quality control engineer, product and materials testing technologist, and applications engineer.

SPECIALIZED ACCREDITATION

The Civil, Electrical, and Mechanical Engineering Technology programs of study in Engineering Technology are accredited by:

Technology Accreditation Commission (TAC)
of ABET
111 Market Place, Suite 1050
Baltimore, MD 21202
Phone: 410-347-7700

DISTANCE EDUCATION OPTIONS

In addition to the on-campus programs, the upper division of the BSET programs in **Electrical Engineering Technology** and **Fire Safety Engineering Technology** are offered over the Internet to part-time students. This allows students who already hold an AAS degree to complete their junior and senior years of the BSET program at a distance. Students are required to come to the campus only for ELET laboratories. The ELET laboratories are currently offered on a schedule of Saturdays during the

summer school sessions. Estimated completion time for the distance delivery of the junior and senior years is approximately four years, including summers since students generally take two courses per semester.

ENGINEERING TECHNOLOGY PROGRAM EDUCATIONAL OBJECTIVES AND OUTCOMES

Program Educational Objectives: These are statements that describe the expected accomplishments of graduates during the first few years after graduation.

The Department of Engineering Technology at UNC Charlotte is committed to providing the environment and expertise to ensure that its graduates make substantive contributions in their professional endeavors after graduation, both in the areas of technical proficiency and community involvement.

Accordingly, graduates of the BSET Civil, Electrical, Fire Safety, and Mechanical Engineering Technology program and B.S. Construction Management contribute to society as productive technologists and engaged citizens by:

1.) Applying general and discipline-specific concepts and methodologies to identify, analyze, and solve technical problems.

2.) Articulating technical material in a professional manner to potentially diverse audiences and in a variety of circumstances, employing effective oral and written strategies and techniques.

3.) Contributing within team environments, demonstrating ethical, respectful and professional behavior in all associations.

4.) Recognizing and appreciating the environmental, societal, and fiscal impact of the technical professions in a local, national, and global context.

5.) Demonstrating an individual desire and commitment to pursue continuous self-improvement and lifelong learning.

Program Outcomes: These are statements that describe what students are expected to know and able to do by the time of graduation. Graduates with a BSCM or BSET degree from UNC Charlotte will be able to:

1.) Utilize appropriate tools to acquire data and analyze problems. (TAC 2a, 2b, 2c – see below)

2.) Demonstrate effective skills in the development and presentation of team projects. (TAC 2e, 2g, 2k)

3.) Exhibit knowledge and skills consistent with the expectations of a practicing engineering technologist. (TAC 2h, 2j, 2k)

4.) Generate creative and realistic solutions to defined problems and projects. (TAC 2a, 2d, 2f)

5.) Recognize the value of diversity, and identify ethical and societal issues in business and technical tasks. (TAC 2i, 2j)

6.) Solve problems and design components, systems, or processes appropriate to the discipline. (TAC 2a, 2d, & Program Criteria) *Each program defines the specific details of this outcome.*

The Construction Management and Engineering Technology programs identify, measure, and improve student competencies through assessment and continuous improvement of program outcomes, which are mapped to the TAC of ABET Criterion 2 (a through k) criteria listed below:

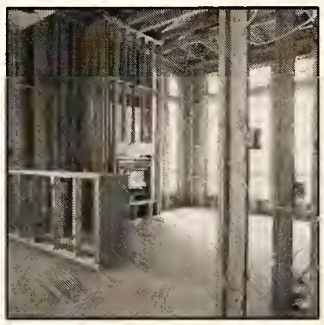
TAC of ABET Criterion 2 a through k Skills	
a.	Graduates are expected to demonstrate an appropriate mastery of the knowledge, techniques, skills, and modern tools for their disciplines.
b.	Graduates are expected to be able to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology.
c.	Graduates will conduct, analyze, and interpret experiments and apply experimental results to improve processes.
d.	Graduates are expected to be able to apply creativity in the design of systems, components, or processes appropriate to program objectives
e.	Graduates are expected to be able to function effectively on teams.
f.	Graduates are expected to be able to identify, analyze, and solve technical problems.
g.	Graduates are expected to be able to communicate effectively.
h.	Graduates are expected to be able to recognize the need for and possess the ability to pursue lifelong learning.
i.	Graduates are expected to be able to understand professional, ethical, and social responsibilities.
j.	Graduates are expected to be able to recognize contemporary professional, societal, and global issues and are aware of and respect diversity.
k.	Graduates are expected to have a commitment to quality, timeliness, and continuous improvement.

BACHELOR OF SCIENCE IN CONTRUCTION MANAGEMENT (BSCM)

Starting in the 2006-07 academic year, the Department of Engineering Technology began offering a new degree program leading to the Bachelor of Science in Construction Management (BSCM).

The Bachelor of Science in Construction Management (BSCM) program is designed to provide the construction education necessary for entry into the construction industry (residential, commercial, industrial sectors, infrastructure, and heavy

horizontal construction) and related careers such as real estate and land development, infrastructure development, code enforcement, and insurance, among others.



The program is further enhanced by a business / management core which includes courses in statistics, computer applications, economics, accounting, engineering economics, business management, business law, finance, and construction law.

The Construction Management program shares a common lower division (freshman and sophomore year) curriculum with the Civil Engineering Technology (BSCET) Program, providing students with a two-year window for exploration to determine which degree, the BS in Civil Engineering Technology or BS in Construction Management, is their desired academic objective.

Requirements for Admission. Applicants for this program may enter directly after completing high school or may enter with 64 credit hours for an Associate in Applied Science (AAS) degree in Architectural, Civil, Construction, or other similarly named Engineering Technology degree earned at a technical or community college and approved by the department.

Freshman Admission. Applicants entering as freshmen must meet the University admission requirements.

Transfer Admission. Transfer applicants not having the Associate in Applied Science (AAS) degree or its equivalent must meet University admission requirements.

Transfer applicants with AAS degrees must:

1) Hold an AAS degree in a field from among: Architectural, Building Construction, Civil, Construction, Design and Drafting, Surveying Technology, or similar title with curriculum acceptable to the Department;
2) An overall GPA of at least 2.2 (based on the 4.0 system) on all courses taken at the technical institute or community college; and
3) Have completed satisfactorily the prerequisite background courses for the program (a limited number of such background courses may be made up by taking them at UNC Charlotte).

Acceptance of the AAS degree indicates the acceptance of up to 64 hours toward the Bachelor of Science in Construction Management (BSCM) degree program only. These hours are not valid toward any other degree program in the University.

There is considerable variance in the contents of technical programs throughout the United States. Should this result in entrance deficiencies, the student can usually remove these deficiencies at a community or technical college prior to admission to UNC Charlotte, or during the first year at UNC Charlotte.

Residence Requirements. A student must earn the last 30 semester hours of credit toward the degree and the last 12 semester hours of work in the major at this University to satisfy residence requirements.

Academic Requirements and Discontinuance Conditions in Construction Management. In addition to University and College of Engineering conditions, a student who is admitted to the CM program without meeting ALL published admission requirements is expected to remove all admission deficiencies within one year. Violators are subject to discontinuance.

Course Requirements. Course requirements correspond to the mode of admission for each student as outlined hereafter.

1) *Entering Freshmen:* students admitted as entering freshmen will complete the respective four-year curriculum as described below.
2) *Transfer students holding an AAS degree:* transfer students with an acceptable associate degree as defined previously under admission requirements begin the program at the junior year with up to 64 credit hours awarded. Prerequisites for students holding an acceptable associate degree from a community or technical college are listed below.
3) *Transfer students not holding an associate degree:* transfer students not holding an AAS degree must complete the remaining coursework for the four-year curriculum after transfer credit application.

Prerequisites for Admission. Students must have satisfactorily completed the following subjects in their two-year associate degree program:

- English Composition and/or Technical Writing (6 semester hours)
- Algebra and Trigonometry (6)
- Analytical, Physical, or Environmental Science with Lab (8)
- Macro Economics (3)
- Construction Methods (3)
- Construction Materials (3)
- Statics (3)
- Strength of Materials (3)
- Construction Surveying (3)
- Computer-Aided Drafting (3)
- Environmental Technology, Hydraulics, or Hydrology (3)
- Engineering Technology Computing Applications (3)

CURRICULUM OUTLINE: B.S. IN CONSTRUCTION MANAGEMENT (BSCM)

Freshman Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ENGL 1101 English Comp or ENGL 1103 Accelerated College Writing & Rhetoric	3	CMET 1680 Professional Dev I	1
ETCE 1121 Construction Methods	3	ENGL 1102 Writing in Academic Community or Writing Elective**	3
ETGR 1100 Eng Tech Comp Apps****	3	ETCE 1211/1211L Surveying I	3
ETGR 1103 Technical Drawing I	2	ETCE 1222/1222L Constr Materials	3
ETGR 1201 Intro to Eng Technology	2	ETGR 1104 Technical Drawaing II	2
MATH 1100, 1103, or 1121	3	MATH 1103, 1121 or Free Elective***	3
TOTAL	**16**		**15**

Sophomore Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ETCE 2112/2112L Construction Surveying & Layout	3	CMET 2680 Professional Development II	1
ETGR 2101 Applied Mechanics I	3	ETCE 2410 Intro Environmental ET	3
GEOL 1200, CHEM 1111 or 1251	3	ETGR Applied Mechanics II	3
MATH 1121 ET Calc or Free Elective***	3	PHYS 1102 Intro Physics II	3
PHYS 1101 Intro Physics I	3	PHYS 1102L Intro Physics II Lab	1
PHYS 1101L Intro Physics I Lab	1	STAT 1220 Elements of Statistics I	3
		Directed Elective^ or ECON 2101 Principles of Econ****	3
TOTAL	**16**		**17**

Junior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ACCT 2121 Principles of Acctg I****	3	ACCT 2122 Principles of Acctg II****	3
ETCE 3123 Cost Estimating	3	CMET 3224 Constr Project Admin	3
ETCE 3131 Foundations & Earthwork	3	CMET 3680 Prof Development III	1
ETCE 3131L Soil Testing Lab (W)	1	ETCE 3222 Engineering Economics****	3
ETCE 3163 Structural Analysis & Design I	3	ETCE 3271 Building Systems	3
ETCE 3163L Structures & Material Lab (W)	1	ETCE 3271L Building Systems Lab (W)	1
ETGR 3071 ET Prof Seminar (W)	1	Directed Elective^	3
TOTAL	**15**		**17**

Senior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
BLAW 3150 Business Law I****	3	CMET 4228 Constr Office Ops	2
CMET 4125 Constr Codes & Docs	2	CMET 4272 Constr Capstone Project (W,O)	2
ETCE 4126 Project Scheduling & Ctrl	3	CMET 4680 Prof Development IV	1
ETCE 4126L Constr Practices Lab (W)	1	ETCE 4251 Highway Design & Constr	3
Directed Electives^ (2)	6	MGMT 3140 Mgmt & Org Behavior****	3
		Core Elective^^ (Technical or Constr B&M)	3
		Directed Elective^	3
TOTAL	**15**		**17**

Total Credit Hours = 128

**Course selected based on Math Placement Test.*

***Writing elective available upon successful completion of ENGL 1103.*

****Free elective available upon successful completion of MATH 1121.*

*****Completion of the Construction B&M (business/management) Core is required: ETGR 1100, ECON 2101, ETGR 3222, ACCT 2121, ACCT 2122, BLAW 3150, and MGMT 3140. ECON 2101 doubles as Construction B&M Core and Social Science Elective in sophomore year. ETGR 1100 and ETGR 3222 serve as replacement prerequisites to INFO 2130 and ECON 2101 for Construction students taking MGMT 3140 and FINN 3120 (core elective). Construction B&M Core courses must be completed with a grade of C or better.*

^Directed electives may be major field courses or general education courses. They are chosen jointly by student and

advisor to ensure that all graduation requirements are met. Non-AAS degreed students must satisfy University and CMET general education requirements. AAS degreed students must satisfy CMET general education requirements.

^^Core Elective may be Technical or Construction B&M. Technical Core Electives must be courses within the Department of Engineering Technology and approved by advisor (ETGR, ETCE, CMET, ETFS, ETEE, or ETME). Construction B&M Elective must be: MKTG 3110, FINN 3120, CMET 4127, or approved by the construction faculty advisor.

BACHELOR OF SCIENCE IN ENGINEERING TECHNOLOGY (BSET)

Disciplines of study in **Engineering Technology** at UNC Charlotte include:

- **Civil Engineering Technology**, (tracks in General Civil and Construction) which includes computer-aided drafting (CAD); structures (analysis, design of structural steel and reinforced concrete); construction (cost estimating, construction planning & administration); transportation (surveying, highway design and construction); water resources (hydraulics, hydrology, and environmental); and geotechnical (soil mechanics, foundations and earthwork).

- **Electrical Engineering Technology**, (tracks in Electronics and Computers) which includes programming, AC/DC circuits, power systems, digital systems, electronics drafting, computer networks, microcomputer interfacing, solid-state electronics, integrated circuits, linear networks, communications and fiber optics, and control systems.

- **Fire Safety Engineering Technology**, which includes principles of fire behavior and combustion, fire protection, hydraulics, fire prevention, building construction for fire service, industrial hazards, risk management, fire safety problem analysis, active and passive protection systems, command and control, fire protection law, technical drawing and CAD, research investigation and leadership.

- **Mechanical Engineering Technology**, which includes technical and mechanical drawing, computer aided drafting, machine design, manufacturing and machine processes, fluid power systems, statics and strength of materials, mechanisms, stress analysis, instrumentation and controls, thermodynamic systems, heat transfer, dynamics, methods analysis and engineering economics.

Admission Requirements to Department of Engineering Technology programs. Students for this degree may enter as freshmen or as transfer students.

Freshman Admission: Applicants entering as freshmen must meet the general University admission requirements.

Transfer Admission: Transfer admission into the Department occurs in one of two situations:

1) Transfer applicants not having the Associate in Applied Science (AAS) degree or its equivalent must meet general University admission requirements.

2) Transfer applicants with an Associate of Applied Science (AAS) degree must:

   a) Hold an Associate of Applied Science (AAS) degree in a field appropriate to the option they plan to enter. Acceptable AAS degrees include Architectural, Automation, Building Construction, Civil, Construction, Computer, Controls, Design and Drafting, Electrical, Environmental, Fire Protection, Fire Science, Optical, Electronics, Industrial, Instrumentation, Manufacturing, Mechanical, Robotics, Surveying or similar title with curriculum acceptable to the Department. A minimum grade point average of 2.2 (out of 4.0) in the AAS degree is required.

   b) Have completed satisfactorily the prerequisite background courses for the option they plan to enter (missing background courses may be taken at UNC Charlotte).

   Acceptance of a completed AAS degree indicates the acceptance of up to 64 semester credit hours toward the Bachelor of Science in Engineering Technology degree program only. These hours may not be valid toward other degree program in the University.

Residence Requirements. A student must earn the last 30 semester hours of credit toward the BSET degree and the last 12 semester hours of work in the major at this University to satisfy residence requirements.

Experiential Learning Requirements. All students must complete an experiential learning course. Experiential courses are practice-oriented courses such as cooperative education, internships, senior design projects, or undergraduate research.

Internships, or *49erships*, involve paid or unpaid work in a career-related position for professional experience. A minimum of 80 work hours for one semester is required to complete the program. Fall and Spring 49erships are part-time. Summer 49erships may be full- or part-time. Full-time students who are in good University standing, have completed their freshman year, and have a 2.0 minimum cumulative GPA are eligible. Internships do not offer academic credit, but are noted on the student's transcript; students pay a course registration fee. Approval for enrollment must be arranged before the student begins a work experience. Students may begin this program during their sophomore year; transfer students must complete one semester at UNC Charlotte before making application for the program. For more information, contact the College of Engineering Office of Student Development and Success or the University Career Center.

Remediation of Academic Entrance Requirements for AAS Transfer Students. In addition to University and College of Engineering requirements, an AAS transfer student who is admitted to any BSET program without meeting ALL published admission requirements is expected to remove all admission deficiencies within one year. Violators are subject to discontinuance.

Course Requirements. Course requirements correspond to the mode of admission for each student as outlined hereafter.

1) Entering Freshmen: Students admitted as freshmen will complete the appropriate four year curriculum for the program into which they were admitted.

2) Transfer students not holding an appropriate AAS degree: Transfer students not holding an appropriate AAS degree must complete the remaining coursework outlined for the respective four year curriculum that they were admitted into after evaluation and application of any transfer credit.

3) Transfer students holding an AAS degree: Transfer students with an acceptable Associate of Applied Science (AAS) degree as defined previously under admission requirements shall begin the program in the junior year with up to 64 transfer credit hours awarded. Prerequisites for students holding an AAS degree from a community or technical college are listed below.

Prerequisites for admission to the Civil, Electrical, and Mechanical Engineering Technology Programs. Students transferring with an AAS degree must have satisfactorily completed the following subjects in their two-year program:

- English Composition, Technical Writing and/or Public Speaking *(6 semester hours)*
- Algebra and Trigonometry *(6 semester hours)*
- Differential and Integral Calculus *(3 semester hours)*
- General Physics (with lab) *(4 semester hours)*
- Additional Physics or Chemistry (with lab) or Geology *(for CIET) (4 semester hours)*
- Humanities or Social Sciences *(3 semester hours)*
- Technical Courses in Major Area as listed under Discipline Specific Prerequisites below *(up to 38 semester hours)*

Total maximum transfer credit from two-year colleges is 64 semester hours.

Discipline Specific Prerequisites:

Civil
- ET Computer Applications
- Computer Aided Drafting
- Surveying
- Statics
- Strength of Materials
- Construction Materials
- Construction Methods
- Hydraulics or fluid mechanics or environmental technology

Electrical
- Electrical Drafting
- Computer Programming (high level language: e.g., BASIC, FORTRAN, PASCAL, C, C++)
- D.C. Circuits
- A.C. Circuits
- Digital Circuits
- Semiconductor Circuits
- Communications, Electronics, Control Systems, or Microcomputers

Mechanical
- Drafting/Computer Aided Drafting
- Machine Processes
- Statics
- Metallurgy or Engineering Materials
- Kinematics or Mechanisms
- Basic Electrical Circuits or Physics II (Electricity)
- Computer Programming (using a higher level language such as Visual Basic, FORTRAN, or C++)

Prerequisites for admission to the Fire Safety Engineering Technology Program. Students transferring with an AAS degree must have satisfactorily completed the following subjects in their two-year associate degree program:

- English Composition, Technical Writing and/or Public Speaking *(6-9 semester hours)*
- Algebra (3 semester hours)
- Two science courses with lab *(8 semester hours)*
- Humanities and/or Social Sciences *(6-9 semester hours)*
- Computer Literacy Course
- Technical Courses in Major Area as listed below *(32-38 semester hours)*
  - Introduction to Fire Protection
  - Fire Prevention and Public Education
  - Fire Detection and Fire Investigation
  - Building Construction
  - Inspections and Codes
  - Sprinklers and Automatic Alarms
  - Fire Protection Law
  - Fire Fighting Strategies
  - Chemistry of Hazardous Materials
  - Hydraulics and Water Distribution
  - Managing Fire Services

CURRICULUM OUTLINE:
CIVIL ENGINEERING TECHNOLOGY PROGRAM

The Civil Engineering Technology program shares a common curriculum with the Construction Management program for the first two years.

Students may move between the common programs until the junior year when the curricula diverge. At the end of the sophomore year, students must select either the analysis and design-oriented Civil Engineering Technology BSET degree or the management-oriented BSCM program.

AAS transfer students from approved programs will receive 64 credit hours for the AAS degree; thus, AAS students need only to complete the upper-division portion of the curriculum listed below and remediate any entrance deficiencies noted upon matriculation. The curriculum is outlined below for both entering Freshmen and AAS transfer students.

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ENGL 1101 English Composition	3	CMET 1680 Professional Development I	1
ENGL 1101 English Comp –**OR**– ENGL 1103 Accelerated College Writing & Rhetoric	3	ENGL 1102 Writing in the Academic Community –OR— Writing Elective**	3
ETGR 1100 Engineering Computer Apps	3	ETCE 1211/1211L Surveying I	3
ETGR 1103 Technical Drawing I	2	ETCE 1222/1222L Construction Materials	3
ETGR 1201 Intro to ET	2	ETGR 1104 Technical Drawing II	2
MATH 1100 College Algebra & Probability	3	MATH 1103 Precalc Math for Sci & Engr	3
TOTAL	16		15

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ETCE 2112/2112L Construction Surveying & Layout	3	ETCE 2410 Intro to Environmental Engr Tech	3
ETGR 2101 Applied Mechanics I	3	CMET 2680 Professional Development II	1
GEOL 1200 Physical Geology –OR— CHEM 1111 or 1251	3	ETGR 2102 Applied Mechanics II	3
MATH 1121 ET Calc	3	PHYS 1102 Intro Physics II	3
PHYS 1101 Intro Physics I	3	PHYS 1102L Intro Physics II Lab	1
PHYS 1101 Intro Physics I Lab	1	STAT 1220 Elements of Statistics I	3
		Directed Elective***	3
TOTAL	16		17

Junior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ETCE 3131 Foundations & Earthwork	3	CMET 3224 Construction Project Admin	3
ETCE 3131L Soil Testing Lab (W)	1	CMET 3680 Professional Development II	1
ETCE 3163 Structural Analysis & Design I	3	ETCE 3242 Hydraulics & Hydrology	3
ETCE 3163L Structures & Material Lab (W)	1	ETCE 3242L Hydraulics Lab (W)	1
ETGR 3222 Engineering Economics	3	ETCE 3264 Structural Analysis II	3
ETGR 3071 ET Professional Seminar (W)	1	ETGR 3171 Engineering Analysis I	3
Directed Elective***	3	Directed Elective***	3
TOTAL	15		17

Senior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
CHEM 1111, 1251 or GEOL 1200	3	ETCE 4251 Highway Design & Construction	3
CHEM 1111L, 1251L, or GEOL 1200L	1	ETCE 4266 Reinforced Concrete Design	3
ETCE 4143 Water & Wastewater Systems	3	ETCE 4272 Capstone Project (W,O)	2
ETCE 4165 Structural Steel Design	3	CMET 4680 Professional Development IV	1
Directed Elective***	3	Directed Elective***	3
Major Elective****	3	Major Elective****	3
Major Elective Lab (W)****	1		
TOTAL	17		15

Total Credit Hours = 128

**Course selected based on Math Placement Test.*

***Writing elective available upon successful completion of ENGL 1103.*

****Directed electives may be major field courses or general education courses. They are chosen jointly by student and advisor to ensure that all graduation requirements are met. Non-AAS degreed students must satisfy University and CIET general education requirements. AAS degreed students must satisfy CIET general education requirements.*

*****Major elective courses must be courses within the Department of Engineering Technology and approved by the faculty.*

CURRICULUM OUTLINE: ELECTRICAL ENGINEERING TECHNOLOGY PROGRAM

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ENGL 1101 English Composition	3	ENGL 1102 Writing in the Academic Community **	3
MATH 1100 College Algebra & Probability	3	MATH 1103 Precalc	3
ETEE DC Circuit Analysis	3	ETEE 1201 Electronics Lab II	1
ETEE 1101 Electronics Lab I	1	ETEE 1213 Digital Circuits I	3
ETGR 1100 Engineering Computer Apps	3	ETEE 1223 AC Circuit Analysis	3
ETGR 1201 Intro to ET	2	Social Science Gen Ed Elective	3
TOTAL	15		16

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
STAT 1220 Elements of Statistics I	3	MATH 1121 Calculus (ET)	3
PHYS 1101 Physics I	3	PHYS 1102 Physics II	3
PHYS 1101L Physics I Lab	1	PYS 1102L Physics II Lab	1
ETEE 2101 Electronics Lab III	1	ETEE 2201 Electronics Lab IV	1
ETEE 2113 Electronic Devices	3	ETEE 2213 Intro to Microprocessors	3
ETEE 2122 Electronic Drafting & Design	2	ETEE 2243 Intro to Control Systems (Electrical Emphasis) or ETEE 2233 Intro to Computer Networks (Computer Emphasis)	3
ETEE 2143 Intro to Electrical Power Systems	3	ETGR 2122 Technical Programming	3
(Electronics Emphasis) or ETEE 2133 Digital Circuits II (Computer Emphasis)			
TOTAL	16		17

CURRICULUM OUTLINE: ELECTRICAL ENGINEERING TECH. PROGRAM (Computer Engineering Technology Emphasis)

Junior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ETEE 3133 Linear Networks I	3	CHEM 1251 Principles of Chemistry ***	3
ETEE 3153 ETEE Lab V (W)	1	ETEE 3124 Linear Networks II	4
ETEE 3183 Digital Logic Design	3	ETEE 3156 ETEE Lab VI (W)	1
ETGR 3071 Eng. Tech Prof. Seminar	1	ETEE 3285 Assembly Lang. Programming	3
ETGR 3171 Eng. Analysis I	3	Directed Elective*	3
Directed Elective*	3		
TOTAL	14		14

Senior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ETEE 3211 Active Networks I	3	ETEE 3212 Active Networks II	3
ETEE 3255 ETEE Lab VII (W)	1	ETEE 3275 Integrated Circuit Apps	3
ETEE 3281 Computer Design	3	ETEE 3286 Microcomputer Apps	3
Major Elective**	3	ETEE 3641 Sr Design Project (W,O)	1
Directed Electives* (2)	6	Major Elective**	3
		Directed Elective*	3
TOTAL	16		16

CURRICULUM OUTLINE: ELECTRICAL ENGINEERING TECH. PROGRAM (Electronics Engineering Technology Emphasis)

Junior Year

Fall Semester	Spring Semester

Course	Cred	Course	Cred
ETEE 3133 Linear Networks I	3	CHEM 1251 Principles of Chemistry ***	3
ETEE 3153 ETEE Lab V (W)	1	ETEE 3124 Linear Networks II	4
ETEE 3183 Digital Logic Design	3	ETEE 3156 ETEE Lab VI (W)	1
ETGR 3071 Eng. Tech Prof. Seminar	1	ETEE 3285 Assembly Lang. Programming	3
ETGR 3171 Eng. Analysis I	3	Directed Elective*	3
Directed Elective*	3		
TOTAL	14		14

Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ETEE 3211 Active Networks I	3	ETEE 3212 Active Networks II	3
Etee 3213 Industrial Electronics	3	ETEE 3214 Operational Amplifiers	3
ETEE 3257 ETEE Lab Vli (W)	1	ETEE 3222 Automatic Controls	3
Major Elective**	3	ETEE 3641 Sr Design Project (W,O)	1
Directed Electives* (2)	6	Major Elective**	3
		Directed Elective*	3
TOTAL	16		16

CURRICULUM OUTLINE: FIRE SAFETY ENGINEERING TECH. PROGRAM

Freshman Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ENGL 1101 English Comp	3	ENGL 1102 Writing in the Academic Community	3
MATH 1101 College Algebra & Prob	3	CHEM 1111 Chemistry in Today's Society	3
ETFS 1120 Fundamentals of Fire Protection	3	STAT 1220 Elements of Statistics I	3
ETFS 2126 Fire Investigation	3	ETFS 1232 Fire Protection Hydraulics & Water Supply	3
ETGR 1201 Intro to ET	2	ETFS 1252 Fire Protection Law	3
ETGR 1100 ET Computer Apps	3		
TOTAL	17		15

Sophomore Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
PHYS 1101 Intro Physics I	3	PHYS 1102 Intro Physics II	3
PHYS 1101L Intro Physics I Lab	1	PHYS 1102L Intro Physics II Lab	1
ETFS 2124 Fundamental s of Fire Prevention	3	ETFS 2230 Hazardous Materials	3
ETFS 2132 Bldg Construction for Fire Protection	3	ETFS 2264 Fire Behavior & Combustion	3
POLS 1110 Intro to American Politics	3	ETFS 2264L Fire Behavior & Combustion Lab	1
Social Science Course	3	ETGR 1103 Tech nical Drawing I	2
Directed Elective*	3	Directed Elective* (W)	3
TOTAL	16		16

Junior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ETFS 3103 Principles of Fire Behavior	3	ETFS 3124 Risk Mgmt for Emergency Svcs	3
ETFS 3113 Bldg Fire Safety	3	ETFS 3144 Active Fire Protection	3
ETFS 3123 Industrial Hazards & Electricity	3	POLS 3119 State Politics	3
ETFS 3611 Professional Leadership Seminar	1	PSYC 2171 Intro to Industrial/Org Psychology	3
ETGR 3222 Engineering Economics	3	Directed Elective*	3
Directed Elective*	3		
TOTAL	16		15

Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ETFS 3183 Fire	3	ETFS 4123	3

Safety Eng Prob Analysis		Command & Control of Major Disasters	
ETFS 3233 Applied Fire Eng Design & Analysis	3	ETFS 4243 Research Investigation	3
POLS 3121 Urban Politics	3	ETFS 4323 Adv Fire Service Admin	3
PSYC 3174 Org Psych	3	POLS 3126 Admin Behavior	3
Directed Elective*	3	Directed Elective*	3
TOTAL	**15**		**15**

CURRICULUM OUTLINE: MECHANICAL ENGINEERING TECH. PROGRAM

Freshman Year

Fall Semester		Spring Semester	
Course	**Cred**	**Course**	**Cred**
ENGL 1101 English Comp	3	ENGL 1102 Writing in the Academic Community	3
MATH 1101 College Algebra	3	MATH 1103 Precalc Math for Sci & Eng	3
PHYS 1101 Intro Physics I	3	PHYS 1102 Intro Physics II	3
PHYS 1101L Intro Physics I Lab	1	PHYS 1102L Intro Physics II Lab	1
ETGR 1100 Eng Tech Computer App	3	ETGR 1104 Tech Drawing II	2
ETGR 1103 Tech Drawing I	2	ETME 1101 Manufacturing Processes	3
ETGR 1201 Intro to ET	2		
TOTAL	**17**		**15**

Sophomore Year

Fall Semester		Spring Semester	
Course	**Cred**	**Course**	**Cred**
MATH 1121 Calculus (ET)	3	STAT 1220 Elements of Stats I	3
ETGR 2101 Applied Mechanics I	3	ETGR 2106 AC &DC Circuits	3
ETGR 2122 Tech Programming	3	ETME 2102 Mechanisms	3
ETME 2101 Applied Materials	3	ETME 2156 Machine Shop Practices	2
ETME 2202 Intro to Mech Design	2	ETME 2156L Machine Shop Practices Lab	1
Social Science Gen Ed Elective	3	LBST 2101 Western Culture & History	3
TOTAL	**17**		**15**

Junior Year

Fall Semester		Spring Semester	
Course	**Cred**	**Course**	**Cred**
ETGR 3071 ET Prof Seminar	1	CHEM 1251 Principles of Chemistry***	3
ETGR 3171 Eng Analysis I	3	ETGR 3222 Eng Economics	3
ETME 3123 Strength of Materials	3	ETME 3113 Dynamics	3
ETME 3133 Fluid Mechanics	3	ETME 3143 Thermodynamics	3
ETME 3152 Stress Analysis Lab	1	ETME 3151 Fluid Mechanics Lab	1
Directed Elective*	3	Directed Elective*	3
TOTAL	**14**		**16**

Senior Year

Fall Semester		Spring Semester	
Course	**Cred**	**Course**	**Cred**
ETGR 3272 Applied Numerical Methods	3	ETME 3242 Sr Design Project II	2
ETME 3213 Machine Design I	3	ETME 3251 Instrumentation Lab	1
ETME 3232 Sr Design Project I	2	ETME 3163 Instrumentation & Controls	3
ETME 3252 Thermodynamics /Heat Transfer Lab	1	Major Electives (2)**	6
ETME 3244 Applied Heat Transfer	3	Directed Elective*	3
Major Elective**	3		
TOTAL	**15**		**15**

**Directed electives may be major field courses or general education courses. They are chosen jointly by student and advisor to ensure that all graduation requirements are met.*

***Major elective courses are approved by the Department as major electives for the respective program. A list is maintained in and published by the Department.*

****Transfer students with an AAS may have completed differing science courses at the community college. Generally, AAS transfer students entering the Mechanical or Electrical ET programs will take Chemistry in the junior year at UNC Charlotte; however, the following chart will provide additional guidance for fulfilling the science requirement at UNC Charlotte:*

Mechanical & Electrical ET Transfer Students with an AAS Degree who have previously taken:	Shall Take at UNC Charlotte:
2 semesters of physics and no chemistry	CHEM 1251
1 semester of physics and 1 semester of chemistry	PHYS 1102 with lab
2 semesters of physics and 1 semester of chemistry	GEOL 1200, BIOL 1110, PHYS 1130, or CHEM 1252

Department of
Mechanical Engineering & Engineering Science

www.mees.uncc.edu

Chair and Professor: *J. Raja*
Bonnie E. Cone Distinguished Professor in Teaching and Professor Emeritus: *G. Mohanty*
Professor Emeritus: *P. DeHoff*
Norvin Kennedy Dickerson Jr. Distinguished Professor: *R. Hocken*
Professors: *Y. Hari, R. Johnson, R. Smelser, Scott Smith, Stuart Smith, R. Wilhelm*
Research Professor: *J. Snyder*
Associate Professors: *H. Cherukuri, R. Coger, J. Cuttino, M. Davies, H. Estrada, R. Keanini, C. Lee, E. Morse, E. Munday*
Assistant Professors: *K. Bose, G. Elliott, H. Fang, B. Mullany, Q. Wei, T. Xu*
Senior Lecturers: *J. Hill, K. Lawton, J. Raquet*
Lecturers: *L. Sharpe, F. Skinner, R.G. Wilson*
Adjunct Professors: *A. Brown, W. Griffin, J. Mason, M. Malburg, D. Metz, R. Minisandram, T. McCoy, D. Nussman, J. Patten, J. Salsbury, V. Srinivasan*

Mechanical engineering is possibly the broadest of the engineering disciplines. Mechanical engineers are involved in almost all aspects of the technological problems facing today's society. Among the major concerns of the mechanical engineer are problems related to conversion, utilization, and conservation of our limited energy resources. Additional important areas for the mechanical engineer include the design and analysis of machines, structures, and manufacturing processes related to the industrial output of the nation. Increasingly, this design and analysis is computer based using the techniques of computer-aided design (CAD/CAM).

A sound understanding of the engineering sciences is fundamental to the education of engineers in every discipline. The engineering sciences are generally identified as those areas of engineering that emphasize the application of the fundamental principles of the physical sciences, primarily physics and chemistry, to engineering problems. Some classical and emerging engineering areas recognized to fall within this field include thermodynamics, fluid mechanics, engineering mechanics, engineering materials, nuclear and chemical sciences, microelectronics theory and fabrication, manufacturing, metrology, and the solid state sciences.

The Department of Mechanical Engineering and Engineering Science offers an undergraduate program leading to a Bachelor of Science in Mechanical Engineering (B.S.M.E.) degree and graduate programs leading to Master of Science in Mechanical Engineering (M.S.M.E.), Master of Science in Engineering (M.S.E.) and Doctor of Philosophy (Ph.D.) degrees. Additionally, a dual degree program is offered in cooperation with the Department of Physics. Using the flexibility provided by the technical electives, and with engineering career counseling, a student can develop a variety of educational programs that would provide the background for professional engineering licensing and practice in any of the areas included within mechanical engineering and/or the engineering sciences. The student can also prepare for graduate study in mechanical engineering, materials science, or any of the recognized areas covered by the engineering sciences. Individualized study programs in one of the interdisciplinary fields involving the merger of engineering and the various science areas, such as bioengineering, microelectronics, or chemical engineering sciences, can be developed.

The program educational objectives are:

- To equip students to use analytical, computational, and statistical methods of engineering measurements and applications.
- To develop the understanding of manufacturing methods so that graduates can contribute to the design, implementation and management of engineering systems.
- To prepare students to engage in the engineering design process by developing their skills at problem solving, planning, collaboration, and communication.
- To provide an education that allows graduates to understand the economic and ethical impact of their engineering decisions.
- To prepare students for successful participation as engineers in society, for graduate or professional studies, and for lifelong learning.

EARLY-ENTRY PROGRAM: Master of Science in Mechanical Engineering

1) A student may be accepted into the early-entry Program at any time after completion of 90 semester hours of undergraduate work applicable to the B.S.M.E. degree. Admission must be approved by the Department Chair or Graduate Program Coordinator and admission is conditional pending the awarding of the undergraduate degree.

2) In order to be accepted to the Mechanical Engineering early entry program, an undergraduate student must have at least a 3.2 overall grade point average and a 3.2 grade point average in the major. The applicant must have taken the appropriate graduate standardized test (GRE) and received acceptable test scores.

3) Students accepted into the early-entry program will be subject to the same policies that pertain to other matriculated graduate students. Early-Entry students must finish their undergraduate degree before they complete 15 hours of graduate work.

The program in Mechanical Engineering is accredited by:

Engineering Accreditation Commission
of the Accreditation Board for
Engineering and Technology (ABET)
111 Market Place, Suite 1050
Baltimore, MD 21202
Telephone: (410) 347-7000

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING AND ENGINEERING SCIENCE (B.S.M.E.)

A major in Mechanical Engineering leading to the B.S.M.E. degree consists of a total of 126 credit hours.

CURRICULUM OUTLINE FOR B.S.M.E. DEGREE

Freshman Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
CHEM 1251 Chemistry I	3	ENGL 1102 English II	2
CHEM 1251L Chemistry I Lab	1	ENGR 1202 Intro to Engineering II	2
ENGL 1101 English I	3	MATH 1242 Calc II	3
ENGR 1201 Intro to Engineering I	2	PHYS 2101 Physics I	3
LBS 110x Arts & Society	3	PHYS 2101L Physics I Lab	1
MATH 1241 Calc I	3	Science Elective	3
TOTAL	15		15

Sophomore Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ECON 2101 Principles of Econ – Macro	3	ECGR 2161 Basic Electronic Eng	3
LBST 2101 Western Culture & Historic Awareness	3	MATH 2171 Differential Equations	3
MATH 2241 Calc III	3	MEGR 2144 Solid Mechanics	3
MEGR 2141 Eng Mechanics I	3	MEGR 2156 Design Project Lab I	2
PHYS 2102 Physics II	3	MEGR 2180 Manufacturing Systems	3
PHYS 2102L Phyiscs II Lab	1	MEGR 2240 Computational Methods	3
TOTAL	16		17

Junior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
MEGR 3111 Thermodynamics I	3	MEGR 3112 Thermodynamics II	3
MEGR 3121 Dynamic Systems I	3	MEGR 3114 Fluid Mechanics	3
MEGR 3161 Eng Materials	3	MEGR 3116 Heat Transfer	3
MEGR 3171 Measurements & Instrumentation	2	MEGR 3122 Dynamic Systems II	3
MEGR 3171L Instrumentation Lab	2	MEGR 3152 Mechanics & Materials Lab	2
ME Tech Elective	3	MEGR 3156 Design Project Lab II	2
TOTAL	16		16

Senior Year

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
ENGR 3295 Prof Development	1	LBST 221x Ethical Issues	3
LBST 2102 Global & Intercultural Connections	3	MEGR 3216 Thermal / Fluids Design	3
MEGR 3221 Machine Analysis & Design	3	MEGR 3256 Senior Design II	2
MEGR 3251 Thermals / Fluids	2	ME Tech Electives (2)	6

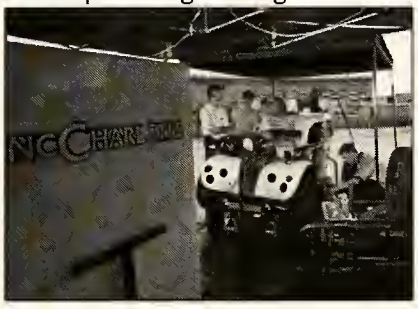
Lab			
MEGR 3255 Senior Design I	2		
ME Tech Elective	3		
Math Elective	3		
TOTAL	**17**		**14**

Total Credit Hours = 126

Note: All Mechanical Engineering students must meet the Statistics requirement described on later in this section.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING (B.S.M.E.) (Concentration in Motorsports Engineering)

The Motorsports Engineering concentration area is intended for students interested in specialized and systematic training and education in the area of automotive engineering as it pertains to motorsports. Students completing the requirements described in this program will receive a special designation on their transcripts showing that they have completed the Motorsports Engineering concentration.



Students must apply for admission and may enter the program during the sophomore or junior years only. To be admitted to the program students must have completed Physics I (PHYS 2101 & 2101L), Calculus I, II, and III (MATH 1241, 1242, and 2241), and Engineering Mechanics I (MEGR 2141), all with a grade of *C* or better and have a minimum GPA of 2.5.

CURRICULUM OUTLINE FOR B.S.M.E. DEGREE WITH A CONCENTRATION IN MOTORSPORTS ENGINEERING

Freshman Year

Fall Semester		Spring Semester	
Course	**Cred**	**Course**	**Cred**
CHEM 1251 Chemistry I	3	ENGL 1102 English II	3
CHEM 1251L Chemistry I Lab	1	ENGR 1202 Intro to Engineering II	2
ENGL 1101 English I	3	MATH 1242 Calc II	3
ENGR 1201 Intro to Engineering I	2	PHYS 2101 Physics I	3
LBST 110x Arts & Soceity	3	PHYS 2101L Physics I Lab	1
MATH 1241 Calc I	3	Science Elective	3
TOTAL	**15**		**15**

Sophomore Year

Fall Semester		Spring Semester	
Course	**Cred**	**Course**	**Cred**
PHYS 2102 Physics II	3	ECGR 2161 Basic Electronic Eng.	3
PHYS 2102 Physics II Lab	1	MATH 2171 Differential Equations	3
MEGR 2141 Eng. Mechanics I	3	MEGR 2144 Solid Mechanics	3
MATH 2241 Calc III	3	MEGR 2156 Design Project Lab I *(Automotive Eng Area)*	2
ECON 2101 Principles of Econ – Macro	3	MEGR 2180 Manufacturing Systems	3
LBST 2101 Western Cultural & Historic Awareness	3	MEGR 2240 Computational Methods	3
		MEGR 2299 Motorsports Clinic I	1
TOTAL	**16**		**18**

Junior Year

Fall Semester		Spring Semester	
Course	**Cred**	**Course**	**Cred**
MEGR 3111 Thermodynamics I	3	MEGR 3112 Thermodynamics II	3
MEGR 3121 Dynamic Systems I	3	MEGR 3114 Fluid Mechanics	3
MEGR 3161 Eng. Materials	3	MEGR 3116 Heat Transfer	3
MEGR 3171 Measurements & Instrumentation	2	MEGR 3122 Dynamic Systems II	3
MEGR 3171L Instrumentation Lab	2	MEGR 3152 Mechanics & Materials Lab	2
Motorsports Tech Elective	3	MEGR 3156 Design Project Lab II *(Automotive Eng Area)*	2
TOTAL	**16**		**16**

Senior Year

Fall Semester		Spring Semester	
Course	**Cred**	**Course**	**Cred**
ENGR 3295 Prof Development	1	LBST 221x Ethical Issues	3
LBST 2102 Global & Intercultural	3	MEGR 3216 Thermal / Fluids	3

Connections		Design	
MEGR 3221 Machine Analysis & Design	3	MEGR 3356 Motorsports Clinic III	2
MEGR 3251 Thermals / Fluids Lab	2	Math Elective	3
MEGR 3355 Motorsports Clinic II	2	Motorsports Tech Elective	3
Motorsports Tech Electives (2)	6		
TOTAL	**17**		**14**

Total Credit Hours = 127

Mechanical Engineering Statistics Requirement. University General Education requirements are met with the 12 credit hours of Liberal Studies electives to meet the objectives of a broad education consistent with the educational goals of the profession. The science elective must be chosen from the physical, life, or earth sciences to complement the student's overall educational plan and to satisfy the college degree requirement. A math elective is required to broaden the student's mathematical skills.

All MEGR students must complete a statistics requirement by taking either STAT 3128 (Probability and Statistics for Engineers) or MEGR 3282 (Statistics Process Control and Metrology). *Note: STAT 3128 counts as a mathematics elective and also fulfills the statistics requirement; MEGR 3282 counts as a technical elective.*

Students who fulfill the statistics requirement with MEGR 3282 may select their math elective from MATH 2164 or a 3000 level mathematics course approved by the Department.

The technical electives are chosen in consultation with an academic advisor. The student can use these electives to (1) obtain some breadth within the engineering sciences by choosing additional advanced courses from the various engineering sciences; (2) obtain significant depth within a particular area of mechanical engineering, or engineering science, through the use of available engineering science, mechanical engineering, science, mathematics and other engineering courses; and (3) prepare for graduate work in mechanical engineering, engineering science or some other engineering areas.

All mechanical engineering majors must satisfactorily complete ENGR 1201 during their first semester in attendance in mechanical engineering at UNC Charlotte. Mechanical engineering students must maintain a GPA of 2.0 in their major.

The Motorsports concentration area has three additional requirements:

1.) Individual and team design projects beginning in the sophomore year (Project Lab I & II) must be completed in the automotive engineering area.

2.) Students must complete Motorsports Clinic II, and III (MEGR 3355, 3356) in place of Senior Design I & II (MEGR 3255 & 3256).

3.) Students must select all three required technical electives from the prescribed list of motorsports engineering courses: MEGR 3210, MEGR 3211, MEGR 4112, MEGR 4143, or MEGR 4144. Other suitable technical electives such as MEGR 3890 may be approved by the Motorsports Engineering Faculty Advisor or Department Chair.

DUAL DEGREE PROGRAM WITH PHYSICS

The Department of Mechanical Engineering offers a dual degree opportunity with the Department of Physics and Optical Science. The dual degree is designed to broaden and enhance the education of students in the engineering degree program. Students can obtain a B.S. Physics and B.S. Mechanical Engineering dual degree.

B.S.M.E./B.S. IN PHYSICS

To obtain a dual B.S. degree in Mechanical Engineering and Physics, an undergraduate student must complete all requirements for the B.S.M.E. degree as established by the Department of Mechanical Engineering. In addition, the student must complete 12 hours of upper division physics courses specified by the Department of Physics and Optical Science. To meet the upper division physics requirement, students must complete the following courses: PHYS 3141 (Introduction to Modem Physics), PHYS 4231 (Electromagnetic Theory I), PHYS 4241 (Quantum Mechanics I), and 3 elective hours chosen from a list of approved courses available from the Department of Physics and Optical Science. A B.S. in Physics under this program will be awarded at the same time as the B.S.M.E. The B.S. Physics degree will not be awarded in advance of the engineering degree.

Current B.S. Physics requirements:

- PHYS 1000 New Student Seminar
- PHYS 2101, 2101L, 2102, & 2102L Intro Physics
- PHYS 3101 Topics and Methods of General Physics
- PHYS 3121 Classical Mechanics
- PHYS 3141 Introduction to Modem Physics
- PHYS 3151 Thermal Physics
- PHYS 3282 & PHYS 3283 Advanced Labs
- PHYS 4231 & PHYS 4232 Electromagnetic Theory
- PHYS 4241 Quantum Mechanics
- 9 elective hours of PHYS at 3000-4000 level
- CHEM 1251 & 1251L
- ITCS 1214
- MATH 1241, MATH 1242, MATH 2171, MATH 2241, MATH 2242

B.S. Physics / B.S.M.E. Requirements

These common courses are taken as part of both the B.S. M.E. and B.S. Physics. PHYS 2101 and 2101L, PHYS 2102 and 2102L, CHEM 1251 and 1251L, MATH 1241, MATH 1242, MATH 2171, MATH 2241.

**Note: Students in this program will be encouraged to take MATH 2242 as their Math elective in the ME curriculum.*

Substitutions: Students in this dual degree program will be allowed to substitute certain engineering courses for the physics requirements.

- ENGR 1201 (Intro. To Engineering Practice and Principles) for PHYS 1000
- MEGR 2240 (Computational Methods) for PHYS 3101
- MEGR 3111 (Thermodynamics I) for PHYS 3151
- MEGR 3121 (Dynamic Systems I) for PHYS 3121
- MEGR 3122 (Dynamic Systems II) for PHYS 3122
- ECGR 2161 (Basic Electronic Engineering) for 3 hrs PHYS elective credit
- MEGR 3255/3256 (Senior Design I and II) for PHYS 3282/3283
- MEGR 3171 (Measurements and Instrumentation) for ITCS 1214

Additional courses required for the dual degree:

- PHYS 3141 (Introduction to Modem Physics)
- PHYS 4231 (Electromagnetic Theory I)
- PHYS 4241 (Quantum Mechanics I)
- 3 elective hours at 3000-4000 level

College of Health and Human Services

www.health.uncc.edu

Dean: *Karen Schmaling*
Associate Dean: *Jane Neese*

Purpose. The College of Health and Human Services offers professionally recognized and accessible undergraduate and graduate degree programs that are nationally and globally relevant, and responsive to changing health care and human service needs in the state and region. The College achieves excellence through informed and effective teaching in its degree programs, community partnerships, and professional activities and research to advance science and practice in the health and human services professions.

The College of Health and Human Services offers professionally recognized and accessible undergraduate and graduate degree programs that are nationally and globally relevant, and responsive to changing health care and human service needs in the state and region. The College achieves excellence through informed and effective teaching in its degree programs, community partnerships, and professional activities and research to advance the science of healthcare and the delivery of health and human services.

Programs. The College offers degree programs at the doctoral, masters, and baccalaureate level including: the Doctor of Philosophy in Health Services Research (Ph.D.), the Master of Science in Clinical Exercise Physiology (M.S.), the Master of Health Administration (M.H.A.), Master of Science in Nursing (M.S.N.), the Master of Science in Public Health (M. S. P. H.), and the Master of Science in Social Work (M.S.W.); the Bachelor of Science in Athletic Training (B.S.), the Bachelor of Science in Exercise Science (B.S.), the Bachelor of Science in Nursing (B.S.N.), the Bachelor of Science in Public Health (B.S.P.H.), and the Bachelor of Science in Social Work (B.S.W.). The College also offers two undergraduate minors: Interdisciplinary Health Studies (IDHS) and Social Work (SW). All nursing degree programs offered by the School of Nursing are accredited by the Commission on Collegiate Nursing Education (CCNE). The B.S.N. program is approved by the North Carolina Board of Nursing. The B.S.W. and M.S.W. programs are accredited by the Council on Social Work Education. The Athletic Training Education Program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP). The nurse anesthesia concentration in the M.S.N. program is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA).

Technical Standards. Technical standards define the attributes that are considered necessary for nursing and students enrolled in the BS degree program in Athletic Training to possess in order to complete their education and training, and subsequently enter clinical practice. These technical standards are prerequisites for entrance to, continuation in, and graduation from a student's chosen program in the College of Health and Human Services at the University of North Carolina at Charlotte.

Students must possess aptitude, ability, and skills in four areas: Psychomotor (coordination/mobility); Senses (visual, auditory, tactile, olfactory); Communication (verbal, nonverbal, written); and Behavioral/Social Attributes.

The technical standards described by the student's chosen program are critically important to the student and must be performed by the student. Contact specific programs for detailed technical standards. Documentation of any disability is accomplished through the University Office of Disability Services.

Foreign Language Requirement. Nursing and social work students seeking either a BSN or BSW degree are required to demonstrate proficiency in the language of their choice. Nursing students enrolled in the BSN or RN-BSN program must demonstrate foreign language proficiency through the 1202 level. Students enrolled in the BSW program must demonstrate proficiency in the language of their choice through the intermediate 2000 level. There is no foreign language requirement for students enrolled as Exercise Science and Athletic Training majors although it is highly recommended for students to become proficient in a second language.

Proficiency can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same language in high school through level three; (3) achieving a satisfactory score on the foreign language placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

School of Nursing

www.health.uncc.edu/son

Associate Dean and Director: *L. Travis*
Interim Associate Director of the Undergraduate Division: *L. Edwards*
Interim Associate Director of the Graduate Division: *G.. Foss*
Professors: *J. Dienemann, L. Travis, M. Wilmoth*
Associate Professors: *L. Edwards, G. Foss, S. Hardin, D. Langford, L. Moore, J. Neese, A. Newman*
Assistant Professors: *M. Coffman, J. Cornelius, M. Flood, C. Maynard, D. Sanders, V. Sousa*
Lecturers: *J. Broome, D. Daniels, Z. Edinger, S. Hartman, D. Kazemi, S. Lynch, C. Mix, T. Morris, J. Padilla, J. Ruth, P. Shoe, M. E. Smith, M. G. Smith, C. Toth, L. Wagnes*

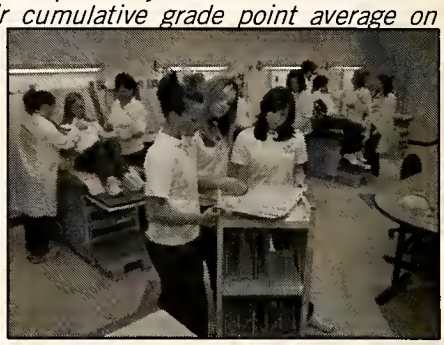
The School of Nursing consists of two divisions: (1) the Undergraduate Division and (2) the Graduate Division. The School offers the B.S.N. degree, both entry level and RN-B.S.N. completion curricula, the RN-M.S.N. curriculum, and the M.S.N. degree with various specialty concentrations. Options of traditional classroom education or individual access (online) education are available in the School of Nursing for the RN–B.S.N. completion program and some of the M.S.N. specialty concentrations.
and one of the six M.S.N. specialty concentrations.

BACHELOR OF SCIENCE IN NURSING

The Bachelor of Science in Nursing degree (B.S.N.) requires a minimum of 120 semester hours. A student must earn the last 25% of baccalaureate degree requirements at UNC Charlotte.

Upper-Division Nursing Major

Requirements for Admission. Admission decisions to the Upper-Division Nursing Major are made by the School for the Fall and Spring semesters of each academic year. Not all applicants who meet the minimum requirements can be accommodated. *Applicants are competitively reviewed for admission based on their cumulative grade point average on college transferable coursework and their grade point average in the required prerequisite science courses and answers to essay questions. After the initial review, select students will be invited for interviews prior to final admission decisions.* Consistent with University policy, the School offers admission to applicants whose credentials present the best qualifications among those meeting minimum requirements.



Minimum criteria for application to the Nursing major are: a cumulative grade point average of 2.0or better in all college coursework, a minimum of a *C* in all required prerequisites, and the completion of required nursing prerequisites by the end of the Spring semester prior to the Fall for which application is made and by the end of the Fall semester prior to the Spring for which application is made. All admitted Nursing majors must be certified as a nursing assistant (CNA I).

Completed applications are accepted through January 31 of the academic year preceding the Fall for which admission is sought, and August 31 of the academic year preceding the Spring for which admission is sought. Application forms are available in the Office of Student Services, College of Health and Human Services. Admission decisions are communicated in writing by the School. Applicants who are not admitted may reapply for a future term.

All students admitted to the pre-licensure B.S.N. curriculum must have prerequisite computer knowledge in using e-mail, word processing (create/save/open/ retrieve), file management, editing, formatting) and using an internet browser (search and navigate).

Prerequisites. Students are required to complete ENGL 1101; ENGL 1102; CHEM 1203 and 1204 with labs (or CHEM 1251 and 1252 with labs); BIOL 1273, BIOL 1273L, BIOL1274 BIOL 1274L, and BIOL 1259; MATH 1100; STAT 1222 (or STAT 1220 or 1221); PSYC 1101; SOCY 1101 or ANTH 1101; NURS 2100, NURS 2200, and NURS 2201 prior to enrollment in clinical nursing courses. The School of

Nursing strongly recommends LBST 2211 as a part of the student's general education requirements.

Pre-Nursing. Freshmen seeking admission to the nursing major may be admitted to Pre-Nursing. Transfer and change of major students who have not completed all prerequisites may be admitted to Pre-Nursing; however, these students must have a minimum overall 2.0 GPA on all college work attempted to be a Pre-Nursing major. **Admission to Pre-Nursing does not automatically admit an applicant to the Nursing Major.**

RN/BSN Curriculum

Requirements for Admission. Registered Nurses seeking a Bachelor of Science in Nursing degree may apply for admission to the RN/B.S.N. curriculum. Criteria for admission to the program are a current unencumbered license as a Registered Nurse in North Carolina, a cumulative grade point average of 2.0 or better in all college coursework and at least a *C* in all required nursing prerequisites by the end of the semester prior to the semester for which application is made.

Admission decisions are made by the School of Nursing. *Applicants are competitively reviewed for admission based on their GPA in all college transferable coursework and their GPA in required prerequisite science courses.* Students are admitted in cohorts two times each academic year. Completed applications are accepted from November 15 to March 30 for the fall cohort and from May 15 to September 30 for the spring cohort. Applications are available from the Office of Student Services in the College. Admission decisions are communicated in writing by the School. Applicants who are denied may reapply.

All students admitted to the RN-B.S.N. completion curriculum need to have prerequisite computer knowledge in using e-mail, word processing (create/save/open/retrieve), file management, editing, formatting, and using an internet browser (search and navigate). The RN-B.S.N. nursing curriculum is offered through three formats. Students may enroll in the totally web-based curriculum (through Distance Education) , in the traditional, face-to-face curriculum or in the Carolinas Medical Center – Carolinas College of Health and Science curriculum. The Carolinas Medical Center – Carolinas College of Health and Science curriculum is designed for those registered nurses employed within the Carolinas Healthcare System and those graduates of their programs. Each curriculum is nine courses and 30 credit hours in length.

RN-B.S.N. Curriculum Prerequisites. Students are required to complete ENGL 1101; CHEM 1203 with lab (or CHEM 1251 with lab); BIOL 1273, BIOL 1273L, BIOL 1274, BIOL 1274L, and BIOL 1259; PSYC 1101; SOCY 1101 and MATH 1100.

Pre-RN-B.S.N. Registered nurses seeking admission to the RN-B.S.N. curriculum who need to complete nursing prerequisites and/or General Education courses may apply for admission to Pre-RN-B.S.N. Applicants must have a cumulative GPA of at least 2.0 on all college work attempted. **Admission to Pre-RN-B.S.N. does not automatically admit an applicant to the RN-B.S.N. Curriculum.**

Prerequisites for Participation in Clinical Experiences

Immunization and Health Status. Prior to admission to the major, all students must submit evidence of a physical examination, including specific communicable disease screening or proof of immunization. The P.P.D. must be repeated and the results submitted annually as long as the student is enrolled in clinical courses. Students must present documentation of a completed series of HBV immunizations prior to any contact with patients/clients, or sign a declination form indicating a refusal of the vaccination. All immunizations must be kept current throughout the program.

CPR Certification. For all clinical courses, it is the student's responsibility to obtain and maintain CPR Certification (adult, infant and child) for health care providers. The only CPR certification accepted is the American Heart Association – Health Care Provider and the Red Cross – Professional Rescuer. Evidence of current CPR certification must be kept on file in the Office of Student Services during enrollment in the professional program.

Universal Precautions. All students must successfully complete a College computer-based exam on universal precautions each year of the professional program.

Drug Testing and Criminal Background Checks. Students in a professional program may be asked by a clinical facility to undergo drug testing and/or have a criminal background check before being allowed to participate in a clinical experience at that facility. Students are responsible for the cost of drug testing and criminal background checks.

All RN-B.S.N. students must meet the University's immunization and health status requirements.

Requirements for Progression in the Nursing Program

1. The Progression Policy for upper-division nursing students is included in the School of Nursing handbooks, which are available online at: www.health.uncc.edu/students/handbooks.cfm?dept=students
2. No course in the Nursing major can be taken as transient study. Transfer credit for nursing courses will be considered on an individual basis.

CURRICULUM OUTLINE: B.S.N. DEGREE

Freshman Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
ENGL 1101 English Comp	3	ENGL 1102	3
MATH 1100	3	STAT 1220, 1221, or 1222	3
PSYC 1101	3	CHEM 1204/1204L or 1252/1252L	4
CHEM 1203/1203L or 1251/1251L	4	Foreign Language 1202	4
Foreign Language 1201 (or pass proficiency exam)	4	LBST 1100 series: Arts, Literature, & Culture	3

Sophomore Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
BIOL 1273/1273L	4	BIOL 1259/1259L	4
NURS 2100	3	BIOL 1274/1274L	4
SOCY 1101 or ANTH 1101	3	NURS 2200	3
LBST 2101	3	NURS 2201	2
LBST 2102	3	LBST 2200 Series: Ethical Issues & Cultural Critique	3

Junior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
NURS 3102	3	NURS 3205	3
NURS 3105	2	NURS 3206	1
NURS 3106	1	NURS 3230	2
NURS 3107	3	NURS 3240	3
NURS 3108	3	NURS 3430	3
NURS 3120	2	NURS 3440 (W)	3
NURS 3420	1		

Senior Year			
Fall Semester		**Spring Semester**	
Course	**Cred**	**Course**	**Cred**
NURS 4100	3	NURS 4201	2
NURS 4106	1	NURS 4203	3
NURS 4120	2	NURS 4240	2
NURS 4130	3	NURS 4440	1
NURS 4420	3	NURS 4450 (W)	3
NURS 4430 (O)	3	NURS 4900	2

Total Credits for BSN program = 124

CURRICULUM OUTLINE: RN-B.S.N. COMPLETION

General Education Requirements and Prerequisites for the Nursing Major:

BIOL 1259* (4)
BIOL 1273* (4)
BIOL 1274* (4)
CHEM 1203 or 1251* (4)
ENGL 1101* (3)
ENGL 1102* (3)
Foreign Language** (8)
LBST 1100 series (3)
LBST 2101 (3)
LBST 2102 (3)
LBST 2200 series (3)
MATH 1100* (3)
PSYC 1101* (3)
SOCY 1101* or ANTH 1101 (3)
STAT 1220, 1221, or 1222 (3)

RN-B.S.N.: UPPER-DIVISION NURSING MAJOR

NURN 3103 Concepts of Professional Nursing Science (3)***
NURN 3108 Health Assessment for Nurses (3)
NURN 4100 Aging and Health (3) (O)
NURN 4201 Information Technology: Application in Health Care (2)
NURN 4203 Leadership in Nursing Practice (2)
NURN 4440 Community Health Nursing (6) (W)
NURN 4450 Design & Coordination of Care for Nurses (6) (W)
NURN 4900 Research in Nursing Practice (2)
STAT 1220 Elements of Statistics (BUSN), STAT 1221 Elements of Statistics (BIOL), or STAT 1222 Introduction to Statistics (3)

**Prerequisite to Nursing*
***Students must be proficient through the 1202 level through coursework or proficiency testing*
****Students are awarded 39 credit hours upon successful completion of NURN 3103*

EARLY-ENTRY OPTION: Master of Science in Nursing

The RN-MSN program is designed for the outstanding student who wants to pursue an accelerated path to the MSN. Applicants must meet all admission requirements for the RN to BSN and graduate program and make application directly to the Graduate School with the appropriate fee simultaneously with the application to RN-BSN. The following application criteria apply to Early Entry MSN applicants:

1) Applicants must meet all criteria for admission to the RN-BSN Program (all prerequisites taken).
2) Satisfactory performance on the Graduate Record Examination or the Miller Analogies Test or a

previous Graduate degree is required.
3) One year of professional nursing practice is recommended.
4) An essay (statement of purpose) describing the applicant's experience and objective in undertaking graduate study in the chosen specialty.
5) The program of study will substitute nine credits from the MSN for the BSN program. NURS 6160 will be substituted for NURN 4900 Research in Nursing Practice, NURS 6002 will be substituted for NURN 4201 Information Technology: Applications in Health Care and STAT 6027 will be substituted for the statistics requirement. These credits will apply to both programs.
6) Admission is provisional upon evidence of successful completion of the BSN with a GPA of 3.0 in the RN-BSN program.
7) Students graduate with a BSN and then a MSN.
8) The Nurse Anesthesia Specialty does not admit Early Entry students.

Tuition rates for courses are based on the academic status of students, not on the undergraduate or graduate level of the course. As soon as students enroll in a graduate course, their academic status changes from undergraduate to graduate. This changes the tuition charges from undergraduate to graduate for all courses taken in the remainder of the RN to BSN program as well as the courses in the MSN program.

Department of Kinesiology

www.health.uncc.edu/knes

Chair and Associate Professor: *M. Cordova*
Professors Emeriti: *Bostian, H. Murphy, J. Tillotson*
Associate Professor Emeriti: *J. Healey*
Professor: *T. Lightfoot*
Associate Professors: *M. Turner*
Assistant Professor: *S. Ferguson, T. Hubbard*
Senior Lecturers: *R. Fielding, S. Kohn*
Lecturers: *J. Barto, M. Belles, L. Probst, B. Ward, A. Williford, B. Wood*

Kinesiology is the discipline that engages in the comprehensive study of human movement, where this knowledge is applied to a wide range of human performance areas and allied healthcare. Undergraduate opportunities include a Bachelor of Science degree in Exercise Science, a Bachelor of Science degree in Athletic Training, a Master of Science in Clinical Exercise Physiology, and multiple courses emphasizing Lifetime Physical Activity and Physical Fitness.

The **Exercise Science** major offers preparation for employment as Exercise Science practitioners in business and industry, health agencies, hospitals, physical fitness centers, sport medicine clinics, colleges / universities or any other setting which utilizes exercise and physical fitness to promote healthy active lifestyles and outcomes. The **Athletic Training** major prepares students for national certification and licensure as a certified athletic trainer with career opportunities in high schools, colleges/universities, orthopedic and sports medicine clinics, business and industry, professional sports teams, government health agencies, and research laboratories. The **Pre-Kinesiology** major is the classification that indicates that students are in a preparatory program for either the Athletic Training major or the Exercise Science major. Personal health enhancement opportunities are available through **Lifetime Fitness and Movement** courses.

PRE-KINESIOLOGY

Applicants who satisfy freshman or transfer requirements for admission to the University and who apply to either the Athletic Training OR Exercise Science majors are eligible for admission to the Pre-Kinesiology major. All students entering the university in Summer 2003 or later, will be required to complete the revised General Education requirements. A suggested sequence of courses for Pre-Kinesiology students that meet these General Education requirements as well as the prerequisites for both Exercise Science and Athletic Training can be found at www.health.uncc.edu/knes.

Students who apply for either the **Athletic Training OR Exercise Science** major are initially classified as Pre-Kinesiology majors until they meet the following requirements: cumulative GPA of 2.0 or higher; completion of 60 hours; and successful (grade of C or better) completion of BIOL 1273, BIOL 1273L, BIOL 1274, BIOL 1274L, CHEM 1203*, CHEM 1203L*, CHEM 1204*, CHEM 1204L*, STAT 1222, COMM 1101, MATH 1101, HLTH 2101**, EXER/ATRN 2294, EXER/ATRN 2295 and EXER/ATRN 2298. Students wishing to pursue the Exercise Science major should choose the prefix EXER and Athletic Training majors the ATRN prefix for courses in the major. Students applying for the Athletic Training major must make a grade of C or higher in the above courses and have a cumulative GPA of 2.5 or higher before making application to the ATRN major. Students applying for the Exercise Science major must make a grade of C or higher in the above courses and have a cumulative GPA of 2.0 or higher before making application to the EXER major.

** Students thinking about pursuing further education in Physical Therapy, Occupational Therapy, Medical School, or anything similar should take CHEM 1251, CHEM 1251L, CHEM 1252, and CHEM 1252L series of courses in place of CHEM 1203 and 1204 series.*

*** Pre-Kinesiology majors are highly recommended to take LBST 2214 (Health and Quality of Life); this will substitute for HLTH 2101 (Healthy Lifestyles) as a required course and meet a general education requirement.*

BACHELOR OF SCIENCE IN EXERCISE SCIENCE (EXER)

This degree program offers preparation for employment as Exercise Science practitioners in: health agencies, hospitals, fitness centers, business and industry, research laboratories, or any other setting which provides physical fitness enhancement programs for clients and patients. The courses in this major prepare the student to sit for the American College of Sports Medicine Health Fitness Instructor certification. Required courses are HLTH 3140, EXER 3100, 3260, 3280, 3281, 3286, 3287, 4121, 4132, 4286, 4293, 4294, 4490, and 4660. Additionally, the student must complete EXER 1201 and three activity courses of their choosing.

Students should use the following suggested course sequence to plan their class schedules once they are accepted into the Health Fitness program:

Junior Year	
Fall Semester	**Spring Semester**
Course	**Course**
EXER 3260 Nutrition for the Physically Active	HLTH 3140 Behavior Change
EXER 3100 Exercise Leadership & Instruction	EXER 3286 Exercise Testing
EXER 3280 Exercise Physiology	EXER 3287 Exercise Testing Lab
EXER 3281 Exercise Physiology Lab	EXER Activity Course Elective
EXER Activity Course Elective	Two Electives (6 hours)
PSYC 1101 General Psych	

Senior Year	
Fall Semester	**Spring Semester**
Course	**Course**
EXER 4121 Pharmacology for the Physically Active	EXER 4660 Practitioner Seminar
EXER 4286 Exercise Prescription	EXER 4132 Lifetime Weight Management
EXER 4293 Biomechanics	EXER 4490 Internship (6 credit hours)*
EXER 4294 Biomechanics Lab	
EXER Activity Course Elective	
Two Electives	

**Students must have completed EXER 1201 and three additional activity courses before registering for EXER 4490.*

A complete, updated sequence of courses can be found at www.health.uncc.edu/knes.

BACHELOR OF SCIENCE IN ATHLETIC TRAINING (ATRN)

The emphases of the curriculum are: risk management and injury prevention, pathology of injuries and illnesses, acute care of injuries and illnesses, pharmacology, therapeutic modalities, therapeutic exercise, general medical conditions and disabilities, nutritional aspects of injuries and illnesses, psychosocial intervention and referral, health care administration, and professional development and responsibilities. Students are given opportunities to gain knowledge and skills needed to pass the certification exam of the Board of Certification (BOC) for Athletic Training. Required courses in the upper division are: ATRN 3260, 3280, 3281, 3286, 3287, 3288, 3289, 3290, 3291, 3292, 3293, 3295, 3400, 3401, 4121, 4286, 4290, 4291, 4292, 4293, 4294, 4400, and 4401.

Admission. Students who have completed all of the Pre-Kinesiology prerequisites may apply for the Athletic Training major. Students are admitted to the major for the fall semester only and admission is competitive. Admission decisions are made by a committee within the Department of Kinesiology. Selection into the program is competitive and satisfactorily completing the minimum requirements does not guarantee program admission. After evaluating the credentials of all applicants meeting the minimum academic requirements, the selection committee offers admission to students whose credentials demonstrate the highest level of academic achievement.

The **Athletic Training Education Program** is a rigorous and intense program that places specific requirements and demands on the students enrolled in the program. Examples of these requirements include: the ability to meet the technical standards of the program, current immunizations, possible drug testing and criminal background clearance, universal precaution training, clinical experiences, and successful completion of progression criteria. A detailed description of the requirements of the program can be found in the BS in Athletic Training Student Handbook located in the Department of Kinesiology and on the College of Health and Human Services website at:
www.health.uncc.edu/students/handbooks.cfm?dept=students

Students applying for admission to the Athletic Training major must meet the following minimum academic requirements.

- Cumulative GPA of 2.5 or better in all college course work
- Completion of 60 hours
- Successful completion (grade of *C* or better) in all prerequisites for athletic training: BIOL 1273, BIOL 1273L, BIOL 1274, BIOL 1274L, CHEM 1203, CHEM 1203L, CHEM 1204, CHEM 1204L, STAT 1222, COMM 1101, MATH 1100, HLTH 2101*, ATRN 2150, ATRN 2290, ATRN 2294, ATRN 2295, and ATRN 2298. (*LBST 2214 - Health and Quality of Life - can be used as a substitute course for HLTH 2101)
- Proof of current CPR for the Professional Rescuer with AED (or equivalent) certification
- Completion of the Athletic Training Education Program Application Packet
- Completion of all athletic training major prerequisites in the spring semester prior to the fall for which application is being made
- Completion of athletic training observation experience in the spring semester prior to the fall for which application is being made

Students should use the following suggested course sequence to plan their class schedules once they are accepted into the Athletic Training program:

Junior Year**	
Fall Semester	**Spring Semester**
Course	**Course**
ATRN 3260 Nutrition and Health Fitness	ATRN 3286 Exercise Testing
ATRN 3280 Foundation of Exercise Physiology	ATRN 3287 Exercise Testing Lab
ATRN 3281 Foundation of Exercise Physiology Lab	ATRN 3288 Upper Body Injury Evaluation
ATRN 3291 Therapeutic Modalities	ATRN 3289 Upper Body Injury Evaluation Lab
ATRN 3292 Therapeutic Modalities Lab	ATRN 3293 General Medical and Psychosocial Aspects of Athletic Training
ATRN 3290 Lower Body Injury Evaluation	ATRN 3401 Athletic Training Clinical II
ATRN 3295 Lower Body Injury Evaluation Lab	
ATRN 3400 Athletic Training Clinical I	

Senior Year	
Fall Semester	**Spring Semester**
Course	**Course**
ATRN 4121 Pharmacology for the Physically Active	ATRN 4292 Organization & Admin of Athletic Training
ATRN 4286 Exercise Prescription	ATRN 4401 Athletic Training Clinical IV
ATRN 4290 Therapeutic Exercise	
ATRN 4291 Therapeutic Exercise Lab	
ATRN 4293 Biomechanics	
ATRN 4294 Biomechanics Lab	
ATRN 4400 Athletic Training Clinical III	

***Prerequisites ATRN 2294 and ATRN 2295 should be taken during the spring semester of the sophomore year.*

A complete sequence of courses can be found online at www.health.uncc.edu/knes.

Department of
Public Health Sciences

www.health.uncc.edu/hba

Chairperson: *A. Harver*
Professors: *S. Portwood, K. Schmaling, J. Studnicki*
Assistant Professors: *Y. Bao, J. Hartos (Coordinator of Undergraduate Programs), L. Huber, E. Racine, M. Thompson (Coordinator of the MSPH Program), J. Warren-Findlow*
Visiting Assistant Professor: *J. Fisher*
Adjunct Professors: *W. Brandon, R. Greene, S. Laurent, T. Lightfoot, R. Tong*
Adjunct Associate Professors: *D. Bosley, J. Dmochowski, S. Hardin, H. Sasser*
Adjunct Assistant Professors: *J. Barkley, C.T. Humphries, A. Lincourt*

The Department of Public Health Sciences at UNC Charlotte engages in research, teaching, and service to produce scholars and leaders prepared: to promote and improve human health across the lifespan; to support the optimal organization and management of healthcare locally, nationally, and internationally; and, to deliver efficient, effective, and accessible high quality health services, particularly to vulnerable populations.

The Department is engaged in the development and implementation of interdisciplinary academic and research programs. Current faculty research themes include: risk for chronic disease; life span health issues; health issues of vulnerable populations; maternal and child health; and, health-related measurement, evaluation, and outcomes.

The Department offers an interdisciplinary minor in Health Studies. Undergraduate interdisciplinary experiences provide students better flexibility in working across disciplines as well as within their own specialty as they grow their careers. The Department also provides opportunities for students to work closely with individual members of the faculty through either Independent Study or Undergraduate Research experiences.

BACHELOR OF SCIENCE IN PUBLIC HEALTH (BSPH)

Public health is the science and art of promoting health, preventing disease and injury, and prolonging life through organized efforts of society. Professionals working in the field of Public Health assess, evaluate, monitor, regulate, and implement health care services in the promotion of healthy behaviors and habits on an individual, family, professional, or community level; focus on a variety of health issues, such as infectious diseases, health problems of the elderly and disadvantaged, chronic diseases, health issues of infants and mothers, toxic wastes, and hazardous chemicals; and work in a wide range of positions, such as in businesses, government agencies, education, not-for-profits, and health organizations.

The BSPH will provide undergraduate students with a solid foundation of knowledge in the 5 core areas of public health (health behavior, epidemiology, administration, environmental health, and biostatistics), and provide research and practice experiences to apply them through core content courses, a required internship, and a capstone experience. The program prepares students for entry to mid-level positions in a variety of settings including health-related agencies and organizations, hospitals, local and state public health departments, academic research centers and institutes, corporate disease management and wellness programs, non-profit agencies, and healthcare businesses and industries. Continued study in the Department of Public Health Sciences is also an option for those interested in graduate degrees in Public Health or Health Administration.

Pre-Public Health (PRPH) Major (Guidelines for Freshman and Sophomore years). Applicants who satisfy freshman or transfer requirements for admission to the University and are interested in the BSPH can declare the Pre-Public Health Major (PRPH). It includes a combination of 70-75 hrs of courses that fulfills the UNC Charlotte General Education requirements; includes declaring a minor; and serves as preparatory coursework for the Public Health major (BSPH).

Courses for PRPH major (total hrs = 70-75)

English (3 or 6 hrs)
- ENGL 1101 & ENGL 1102 OR
- ENGL 1103

Math (6 hrs)
- MATH 1100 & STAT 1222

Sciences (7 hrs)
- Choose from list in the *Undergraduate Catalog*

Social Sciences (3 hrs)
- Choose from list in the *Undergraduate Catalog*

Liberal Studies (12 hrs)
- Choose from list in the *Undergraduate Catalog*

Prerequisite Core Courses (9 hrs)
- COMM 1101 Public Speaking
- HLTH 2101 Healthy Lifestyles
- HLTH 3101 Foundations of Public Health

Health-Related Communication (choose 6 hrs from the following)
- COMM 2100 Introduction to Communication Theory
- COMM 2105 Small Group Communication
- COMM 2107 Interpersonal Communication
- COMM 3115 Health Communication
- COMM 3130 Communication & Public Advocacy
- COMM 3135 Leadership, Communication, & Group Dynamics
- COMM 3141 Organizational Communication

Declare a Minor (15-26 hrs)
- Choose any minor on campus *except IDHS*

Electives (as many needed for 70-75 hrs total)
- Includes study abroad courses

Applying to the Public Health Major (BSPH). You must apply for admission to the Public Health major (BSPH). Applications are accepted from students who will have completed 60 credit hours by the time they begin to take courses in the major, including the following 25 hrs of courses listed in the PRPH Major (*whether or not you declared the PRPH Major*): COMM 1101, HLTH 2101, HLTH 3101, Math courses (6 hrs), Science courses (7 hrs), and Social Science courses (3 hrs). (*NOTE: Students will complete any remaining PRPH requirements following admission to the BSPH.)*

Admissions only occur for fall semesters and the number of students admitted each fall is limited. Admission into the BSPH Major is competitive and based on the following:

- A minimum cumulative GPA of 2.5 for 60 credit hours
- GPA for completed courses including COMM 1101, HLTH 2101, HLTH 3101, Math

courses (6 hrs), Science courses (7 hrs), & Social Science courses (3 hrs)
- Goal statement and application for admission

Applications for admission should be submitted the spring semester prior to eligibility to begin the BSPH Major in the fall semester. Applications for admission are due March 15 of each year, and include academic transcripts, application, and a statement of future career goals.

Public Health (BSPH) Major (Guidelines for Junior and Senior years). The Public Health major includes 50 hrs of courses that are designed to meet the criteria established by the Council on Education in Public Health (CEPH) for accreditation of pubic health degree programs. Students completing the curriculum will be eligible to sit for the nationally-recognized Certified Health Education Specialist (CHES) exam.

Courses for the BSPH Major (total hrs = 50)

Core Courses (32 hrs)*

Year 3 Fall
- HLTH 3102 Comparative Healthcare Systems
- HLTH 3103 Behavior Change Theories & Practice
- Remaining 9hrs of course load should be filled with remaining General Education course requirements, remaining Pre-PH Major course requirements, remaining required courses for your declared Minor, required Culture & Health courses, and additional health-related electives

Year 3 Spring
- HLTH 3104 Research & Statistics in Health
- HLTH 3104L Research & Statistics in Health LAB
- HLTH 3105 Public Health Education and Promotion
- Remaining 8hrs of course load should be filled with remaining General Education course requirements, remaining Pre-PH Major course requirements, remaining required courses for your declared Minor, required Culture & Health courses, and additional health-related electives

Year 3 or Year 4
- HLTH 4400 Internship

Year 4 Fall
- HLTH 4102 Healthcare Administration
- HLTH 4103 Environmental Health
- Remaining 9hrs of course load should be filled with remaining required courses for your declared Minor, required Culture & Health courses, and additional health-related electives

Year 4 Spring
- HLTH 4104 Epidemiology
- HLTH 4105 Program Planning & Evaluation
- HLTH 4105L Program Planning & Evaluation LAB
- HLTH 4600 Capstone
- Remaining 5hrs of course load should be filled with remaining required courses for your declared Minor, required Culture & Health courses, and additional health-related electives

**Students will complete the core courses during the designated semesters and will complete the remaining courses from among the following restricted electives as their schedules permit:*

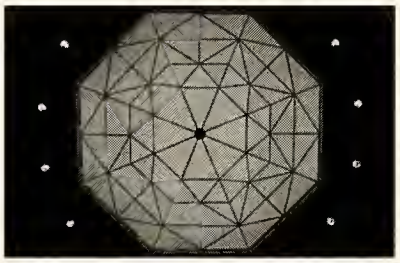
Culture & Health Courses (choose 6 hrs)
- ANTH 3122 Culture, Health, & Disease
- NURS/WMST 4191 Women's Health Issues
- HLTH 3115 Health & the Aging Process
- HLTH/GRNT/WMST 4260 Women: Middle Age & Beyond

Health-Related Electives (choose 12 hrs)
- COMM 3115 Health Communication
- ECON 3141 Health Economics
- EXER 3260 Nutrition & Health Fitness
- EXER 4130 Applied Nutrition for Today's Consumer
- Any HLTH 3000-level or 4000-level course
- POLS 3125 Health Care Policy
- PHIL 3228 Healthcare Ethics
- SOCY 4130 Sociology of Health & Illness
- SOCY 4168 Sociology of Mental Health & Illness
- Any upper level health-related study abroad course

To graduate with a BSPH, you need to have completed 120-125 hrs (70-75 hrs from the PRPH major & 50 hrs from the BSPH major)

MINOR IN INTERDISCIPLINARY HEALTH STUDIES (IDHS)

The Interdisciplinary Health Studies (IDHS) minor was created to support students interested in health-related careers or those seeking a health dimension within other career choices. Students in the minor come from biological, social, and behavioral sciences, as well as from health-related academic majors. The IDHS minor extends students' working knowledge of health applications, better preparing them to be competitive in the job market and to make advanced degree choices.



Students seeking entry-level positions in health services or non-clinical health agencies and organizations after graduation will find this minor helpful in broadening their understanding of contemporary health issues. Students in the minor are well positioned for graduate work in specific disciplines like psychology, sociology, social work, public health,

health communication, or adult development and aging. The program also provides applied health content and added value to academic degrees of students seeking admission to dental, nursing, medical, pharmacy, physical therapy and other professional schools.

National health priorities in the first decade of the 21st century emphasize interdisciplinary training. As students develop specific healthcare competencies, undergraduate interdisciplinary experiences provide students better flexibility in working across disciplines as well as within their own major.

The IDHS minor is awarded only to students completing an undergraduate major at UNC Charlotte. The IDHS minor consists of 22 semester hours: 13 hours must come from a set of required courses and nine hours must come from a set of restricted electives. To qualify for the IDHS minor, students must have a grade point average of 2.0 in courses applied to the minor. Students are encouraged to take electives outside their major department and college to gain a broader health perspective. Because additions and deletions of courses may be made to correspond to current University offerings, students are encouraged to consult with the Program Coordinator as they plan their schedules.

Required courses (9 hours):
HLTH 2101 Healthy Lifestyles (3)
HLTH 4104 Epidemiology (3)
PHIL 3228 Healthcare Ethics (3)

Required Science & Lab course (choose one; 4 hours)
ANTH 2141 Principles of Biological Anthropology and Lab (4)
BIOL 1259 & 1259L Bacteriology (3) and Lab (1)
BIOL 1273 & 1273L Human Anatomy & Physiology (3) and Lab (1)
BIOL 3273 & 3273L Animal Physiology (3) and Lab (1)
PSYC 1101 & 1101L General Psychology (3) and Lab (1)

Electives (choose three; 9 hours)
ANTH 3122 Culture, Health, and Disease (3)
COMM 3115 Health Communication (3)
ECON 3141 Health Economics (3)
ETIN 3243 Occupational Health Technology (3)
FINN 3271 Principles of Risk Management & Insurance (3)
GRNT 2100 Introduction to Gerontology (3)
GRNT 3115 Health and the Aging Process (3)
HIST 2140 Disease and Medicine in History (3)
HLTH 3103 Behavior Change Theories and Practice (3)*
HLTH 4280 Global Health Issues (3)*
NURS 4191 Women's Health Issues (3)
POLS 3125 Health Care Policy (3)
PSYC 2160 Introduction to Health Psychology (3)
SOCY 4130 Sociology of Health and Illness (3)
SOCY 4168 Sociology of Mental Health and Illness (3)

**any HLTH course can count as an elective*

Department of Social Work

www.health.uncc.edu/sowk

Chair: *D. Long*
Professor Emeritus: *J. Dudley*
Professor: *D. Long*
Baccalaureate Program Director: *R. Furman*
Field Coordinator: *S. Marchetti*
Associate Professors: *R. Furman, B. Ramos, J. Shears*
Assistant Professors: *S. Boyd, S. Kulkarni, M. Shobe*
Lecturers: *J. Doherty, G. Jordan, S. Marchetti, T. Matthews*

The Department of Social Work offers a major in Social Work leading to the Bachelor of Social Work (BSW) degree. On the graduate level, the Department offers the Master of Social Work degree.

BACHELOR OF SOCIAL WORK (BSW)

Social work is a profession devoted to helping people function as effectively as possible within their environment. The BSW degree prepares students for generalist social work practice with individuals, families, groups, organizations and communities. BSW graduate provide services such as assessment and intervention, counseling, crisis intervention, referral, mediation, and advocacy with diverse populations across all age groups. BSW graduates work in a broad array of settings including: hospitals; group homes; mental health, substance abuse, child welfare, and youth and family service agencies; nursing homes, and schools. BSW education also provides an excellent foundation for those who wish to pursue graduate study in social work. The BSW program prepares graduates for the North Carolina Certified Social Worker certification.

MAJOR IN SOCIAL WORK

The major in Social Work leading to the BSW degree consists of 76 credit hours made up of 53 credits in required SOWK courses and 23 credits in required courses from other disciplines.

The core courses for the social work major are: SOWK 1101, 2182, 2183, 3100, 3120, 3181, 3182, 3184, 3201, 3202, 3482, 3484, 3683, and 3685, one social work elective and one other social work or gerontology elective. Other required courses for the social work major are SOCY 1101, BIOL 1110 & Lab; PSYC 1101, POLS 1110, PSYC 3151, SOCY 4156 & Lab, and Foreign Language at the 2200 or 2201 level.

CURRICULUM OUTLINE: BSW DEGREE **

Fall Semester		Spring Semester	
Course	Cred	Course	Cred
SOCY 1101	3	PSYC 1101	3
BIOL 1110	3	POLS 1110	3
BIOL 1110L	1	ENGL 1102	3
ENGL 1101	3	Math or Stat or PHIL 2105	3
Math	3	LBST 2101	3
LBST 1100 Series	3		

Sophomore Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
SOWK 1101	3	SOWK 2183	3
SOWK 2182	3	LBST 2200 series	3
LBST 2102	3	Foreign Language 1201 or 1202	4
Foreign Language 1201 or 1202	4	Two Electives	6
Writing Intensive (W) Elective (outside major)	3		

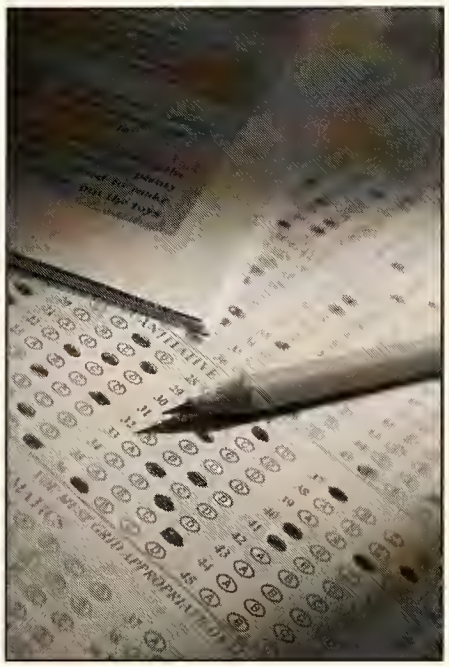
Junior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
SOWK 3120	3	SOWK 3202	3
SOWK 3201	3	SOWK or GRNT Elective	3
SOWK Elective	3	SOCY 4156 with Lab	4
PSYC 3151	3	Two Electives	6
Foreign Language 2200 or 2201	3		

Senior Year			
Fall Semester		Spring Semester	
Course	Cred	Course	Cred
SOWK 3100	3	SOWK 3182	3
SOWK 3181	3	SOWK 3184	3
SOWK 3482	6	SOWK 3484	9
SOWK 3683	1	SOWK 3685	1
Open Slot (if needed)	3		

***For a detailed description of BSW degree requirements, please refer to the BSW Program Student Handbook online at www.health.uncc.edu/students/handbooks.cfm?dept=students.*

MINOR IN SOCIAL WORK

A minor in social work requires 18 hours in the following social work courses: SOWK 1101, 2182, 2183, and three SOWK electives to be approved by the Social Work Program. The minor does *not* prepare students for professional social work practice.



Course Descriptions

Course Descriptions. Course descriptions provide the following information:

- Subject prefix
- Course number
- Course title
- Semester credit hours assigned to the course
- UNC Charlotte General Education requirements that the course satisfies (**O** = Oral Communication and **W** = Writing Intensive), if any
- Prerequisites and/or corequisites (if any)
- Brief description of the course content*
- When the course usually is offered (*Evenings, Yearly, Alternate years, Fall, Spring, Summer, On demand, Internet*)

**The description may specify the number of class (lecture) and/or laboratory sessions and hours. If no class hours are given, the number of class hours per week is the same as the number of semester hours credit assigned to the course.*

An example and explanation of a typical course description:

SUBJ 1234. Title of Course. (Credit Hours) (General Education Requirements Met) Pre/corequisites. Brief description of course content. *(Three lecture hours and one three-hour laboratory per week) (When offered)*

Course Numbering System. Courses are identified by four-digit numbers. The first digit indicates the level of the course:

1000-2999 = lower-division undergraduate
3000-4999 = upper-division undergraduate

The following second digits designate special types of courses:

0 = topics
4 = internships and practicum
5 = cooperative education
6 = seminars
7 = Honors courses
8 = independent study
9 = research

Note: If the letter **L** *follows the course number, the course is a laboratory course.*

Prerequisites and Corequisites. A prerequisite is a requirement that must be met (or a course that must be passed) before enrolling in a more advanced course. A corequisite is a course which should be taken in the same semester as another, unless it has previously been satisfactorily completed.

Crosslisted Courses. A crosslisted course is a single course which is simultaneously listed in the schedule of course offerings by two or more academic departments. They share the same meeting times, room, instructor(s), and curriculum. Students may only receive credit for the single section of the crosslisted course for which they are registered.

Course Prefix. Courses offered for academic credit are listed by number within each subject and the **subjects are listed alphabetically according to prefixes** which are assigned as listed on the following page.

Changes. Course descriptions and numbers are accurate at the time of publication of the *Catalog*. For the most current information, please consult the department or the most current online version of the *Catalog* at www.provost.uncc.edu/catalogs.

Subject	Prefix
Accounting	ACCT
Aerospace Studies	AERO
Africana Studies	AFRS
American Studies	AMST
Anthropology	ANTH
Architecture	ARCH
Arts and Sciences	ARSC
Art: Academic and Departmental	ARTA
Art: Basic Foundation Studios	ARTB
Art: Ceramics	ARTC
Art: Drawing	ARTD
Art: Education	ARTE
Art: Fibers	ARTF
Art: Graphic Design	ARTG
Art: History	ARTH
Art: Illustration	ARTL
Art: Multi-Media	ARTM
Art: Painting	ARTP
Art: Printmaking	ARTR
Art: Time Arts/Photography	ARTT
Art: Sculpture	ARTZ
Athletic Training	ATRN
Biology	BIOL
Business Law	BLAW
Business Honors	BUSN
Civil and Environmental Engineering	CEGR
Chemistry	CHEM
Child and Family Development	CHFD
Chinese	CHNS
Criminal Justice	CJUS
Construction Management	CMET
Communication Studies	COMM
Dance	DANC
Dance and Theatre	DATH
Electrical and Computer Engineering	ECGR
Economics	ECON
Education	EDUC
Education Instructional Systems Technology	EIST
Elementary Education	ELED
English	ENGL
Engineering	ENGR
Earth Sciences	ESCI
Civil and Environmental Engineering Technology	ETCE
Electrical Engineering Technology	ETEE
Fire Safety Engineering Technology	ETFS
Engineering Technology	ETGR
Industrial Engineering Technology	ETIN
Mechanical Engineering Technology	ETME
Manufacturing Engineering Technology	ETMF
Exercise Science	EXER
Film Studies	FILM
Finance	FINN
Languages and Culture Studies	FORL

Subject	Prefix
French	FREN
Geography	GEOG
Geology	GEOL
German	GERM
Greek	GREK
Gerontology	GRNT
History	HIST
Public Health Sciences	HLTH
University Honors Program	HONR
International Business	IBUS
Bus. Info. Systems and Operations Management	INFO
International Studies	INTL
Computer Science	ITCS
Software and Information Systems	ITIS
Italian	ITLN
Japanese	JAPN
Journalism	JOUR
Latin	LATN
Liberal Studies	LBST
Latin American Studies	LTAM
Mathematics Education	MAED
Mathematics	MATH
Middle Grades Education	MDLG
Middle, Secondary, and K-12 Education	MDSK
Mechanical Engineering	MEGR
Meteorology	METR
Management	MGMT
Marketing	MKTG
Military Science	MSCI
Music Education	MUED
Music	MUSC
Nursing: R.N.	NURN
Nursing	NURS
Operations Management	OPER
Operations Research	OPRS
Philosophy	PHIL
Physics	PHYS
Political Science	POLS
Portuguese	PORT
Psychology	PSYC
Reading	READ
Religious Studies	RELS
Russian	RUSS
Secondary Education	SECD
Sociology	SOCY
Social Work	SOWK
Spanish	SPAN
Special Education	SPED
Statistics	STAT
Theatre	THEA
Translating	TRAN
Urban Studies	URBS
Women's Studies	WMST

ACCOUNTING (ACCT)

ACCT 2121. Principles of Accounting I. (3) Prerequisite: sophomore standing or permission of Department. Fundamental accounting principles, with emphasis on the use of financial accounting data and analysis of financial statements. *(Fall, Spring, Summer) (Evenings)*

ACCT 2122. Principles of Accounting II. (3) Prerequisite: ACCT 2121 with a grade of *C* or better and sophomore standing or permission of Department. An introduction to managerial accounting with an emphasis on using accounting information to make decisions. *(Fall, Spring, Summer) (Evenings)*

ACCT 3311. Intermediate Financial Accounting I. (3) Prerequisites: grades of *C* or better in both ACCT 2122 and INFO 2130. Analysis of the financial reporting requirements of corporations with emphasis on the conceptual framework and accounting for assets. Enrollment limited to majors in the College of Business. (*Fall, Summer*) *(Evenings)*

ACCT 3312. Intermediate Financial Accounting II. (3) Prerequisite: ACCT 3311 with a grade of *C* or better. A continuation of ACCT **3311** with emphasis on financial reporting for liabilities and stockholders equity. Also a number of special topics including the accounting for investments and the statement of cash flows. Enrollment limited to majors in the College of Business. (*Spring, Summer*) *(Evenings)*

ACCT 3330. Managerial Cost Accounting. (3) Prerequisite: ACCT 2122. Analysis of the uses of accounting data in the planning, controlling and decision-making processes of business enterprises. Enrollment limited to majors in the College of Business. *(Spring) (Evenings)*

ACCT 3340. Accounting Information Systems. (3) Prerequisites: ACCT 2122 and INFO 2130. An introduction to accounting systems, with particular emphasis on internal controls and computer auditing techniques. Enrollment limited to majors in the College of Business. *(Fall) (Evenings)*

ACCT 3350. Introduction to Auditing. (3) Co/Prerequisites: ACCT 3311 with a grade of *C* or better and ACCT 3340. This course examines the two basic areas of auditing - external and internal, with the objective of giving students an understanding and appreciation of career opportunities in both areas. The course will examine differences and similarities of both areas of auditing with respect to ethics, standards, the audit process and reporting requirements. Enrollment limited to Accounting majors. (*Fall*) *(Evenings)*

ACCT 3400. Accounting Internship. (3) Prerequisite: Junior or Senior accounting major in good standing, with completion of **ACCT 3312** with a grade of *C* or better. Requires permission of the department. Provides a meaningful work experience in the field of accounting. Requires a minimum of 150 hours of supervised employment, 50 hours of work per credit hour. The student works full-time during the period of internship, therefore the student should plan schedules for junior and senior years to accommodate the internship. Internship proposals may be initiated by the student or by the Department. The student should consult with the Department well in advance of registration to discuss available options. Proposal forms must be completed and approved prior to registration and prior to starting the internship. Report on the internship experience is required from both the student and the employer at the conclusion of the internship. Graded on Pass/No Credit basis. Cannot be repeated for credit or taken for credit at the same time or following any other internship for credit. A student who is employed when applying for an accounting internship may not earn internship credit through work for the current employer. (*Fall, Spring, Summer*)

ACCT 3500. Cooperative Education and 49ership Experience. (0) Prerequisite: Accounting major with Department approval, in conjunction with the University Career Center. Enrollment is required for students participating in a cooperative education or 49ership position during each semester they are working in a position. Participating students pay a course registration fee for transcript notation (co-op and 49ership) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For information, contact the University Career Center. *(Fall, Spring, Summer)*

ACCT 3900. Current Developments in Accounting. (1-3) May be repeated for credit. Prerequisite: permission of the department. A research project will be required. Topics will be selected from internal and external auditing, governmental accounting, income taxes, managerial accounting and accounting theory. *(Fall, Spring, Summer) (Evenings)*

ACCT 4220. Income Tax. (3) Prerequisite: ACCT 3311 with a grade of *C* or better. An introduction to the Federal income tax system with emphasis on concepts and procedures applicable to all types of entities. Enrollment limited to Accounting majors. (*Fall*) *(Evenings)*

ACCT 4230. Advanced Income Tax. (3) Prerequisite: ACCT 4220 or equivalent course with a grade of *C* or better. An examination of advanced tax topics regarding corporations, partnerships, and individuals. In addition, estate and gift, fiduciary accounting, tax-exempt entities, and retirement plans will be examined at an introductory level. *(Fall, Spring) (Evenings)*

AEROSPACE STUDIES (AERO)

AERO 1101. The Air Force Today. (1) Pre-professional corequisite: AERO 1101L. Survey of topics relating to the Air Force including officership, professionalism, and basic communicative skills. *(Fall)*

AERO 1101L. The Air Force Today. (0) Leadership Lab. *(Fall)*

AERO 1102. The Air Force Today. (1) Pre-professional corequisite: AERO 1102L. A continuation of AERO 1101 to include a study of organizational structure and missions of the Air Force, life on an active duty base, and the relation of other armed service components to the Air Force mission. *(Spring)*

AERO 1102L. The Air Force Today. (0) Leadership Lab. *(Spring)*

AERO 2101. Development of Air Power I. (1) Pre-professional corequisite: AERO 2101L. Examination of the development of air power from its beginnings through the Cold War emphasizing the evolution of air power concepts and doctrine. An assessment of communication skills is included. *(Fall)*

AERO 2101L. Development of Air Power I. (0) Leadership Lab. *(Fall)*

AERO 2102. Development of Air Power II. (1) Pre-professional corequisite: AERO 2102L. A continuation of AERO 2101 which examines the history of airpower from Vietnam to the present. Oral communication development is a critical element. *(Spring)*

AERO 2102L. Development of Air Power II. (0) Leadership Lab. *(Spring)*

AERO 3101. Leadership and Management. (3) (0) Pre-professional corequisite: AERO 3101L. Study of leadership theory and skills, and the Air Force officer's role as a leader. Includes a study of management skills and their value in the military environment. Emphasis is placed on written and oral communication. *(Fall)*

AERO 3101L. Leadership and Management. (0) Leadership Lab. *(Fall)*

AERO 3102. Defense Administration and Military Management. (3) (0) Pre-professional corequisite: AERO 3102L. Examination of Air Force doctrine, leadership, and ethics. Emphasis is placed on written and oral communication. *(Spring)*

AERO 3102L. Defense Administration and Military Management. (0) Leadership Lab. *(Spring)*

AERO 3201. National Security Issues in Contemporary American Society. (3) (0) Pre-professional corequisite: AERO 3201L. The executive-legislative matrix of our national government is developed and compared with other governmental systems. Special emphasis on the role of the emerging military leader in implementing national policy decisions, civilian control of the military, and regional security issues. *(Fall)*

AERO 3201L. National Security Issues in Contemporary American Society. (0) Leadership Lab. *(Fall)*

AERO 3202. The Defense Leader: Perspectives on Ethics and Justice. (3) (0) Pre-professional corequisite: AERO 3202L. Continued development of the fundamentals presented in AERO 3201 with special emphasis on the military as a profession and officership. Selected ethical and military justice scenarios are presented and discussed to prepare the student with an adequate intellectual framework for action as a professional military officer. *(Spring)*

AERO 3202L. The Defense Leader: Perspectives on Ethics and Justice. (0) Leadership Lab. *(Spring)*

AFRICANA STUDIES (AFRS)

AFRS 1100. Introduction to Africana Studies. (3) Interdisciplinary survey of key issues in the life and history of peoples of African descent and their interaction with other peoples and world cultures; introduction to theoretical foundations in the field of Africana Studies. *(Fall, Spring)*

AFRS 1103. The African Experience. (3) Survey of the history and culture of African people in the context of pre-colonial, colonial, and independent Africa. Focus on socio-political and economic factors. *(Yearly)*

AFRS 1111. The African American Experience through Civil War. (3) Crosslisted as HIST 2160. Exploration of circumstances that brought Africans to the Americas and their experience during the era of slavery. Emphasis on the political, economic, and socio- cultural systems that maintained slavery in the South and constrained freedom in the North and the responses and struggles of African Americans. Topics include: slavery/slave trading to the Americas; the system of slavery in British North America; free blacks; political compromises sustaining the peculiar institution; and the impact of the Civil War and Reconstruction on the freedom, citizenship, and suffrage of African- Americans. *(Fall)*

AFRS 1112. The African American Experience: Civil War to Civil Rights. (3) Crosslisted as HIST 2161. Prerequisites: AFRS 1100 or AFRS 1111 for majors. Exploration of the African-American experience from the Civil War to the present and the struggle of freed slaves and free people of color in garnering the promises of emancipation and the changing status of African-Americans in American society. Interdisciplinary survey of key eras, issues, debates, and personalities in the African-American experience from 1865 to the present. It is strongly encouraged that students take AFRS 1111 before enrolling in this course. *(Spring)*

AFRS 2050. Topics in Africana Studies. (3) Treatment of a special topic. May be repeated for credit as topics vary, with the approval of the department chair. *(Fall, Spring)*

AFRS 2105. Black Images in the Media in the US. (3)

Crosslisted as COMM 2120. Examination of African American images projected through electronic and print media, historically and currently. *(Yearly)*

AFRS 2106. Literary Analysis of Black Protest of the 1960s. (3) Selected African-American literary works examined as outgrowths of the 1960s protest movement. Poetry, drama, and nonfiction of period studied. (*On demand*)

AFRS 2120. African American Women. (3) Crosslisted as WMST 2120. This course explores how cultural, political, historical and economic factors shape African American women's positions and opportunities in society today. *(On demand)*

AFRS 2201. Introduction to Human Relations. (3) Prerequisite: AFRS 1100. Understanding of self and others in a pluralistic society; analysis of theories of personal growth and interaction within the context of differing multi-ethnic values, mores and contributions. (*On demand*)

AFRS 2203. African American Culture. (3) Exploration of the origins and key aspects of African American culture, including music, art, literature, and dance; focus on understanding the connections between the cultural practices of African Americans and other peoples of African heritage and their impact on the rest of the world. *(Yearly)*

AFRS 2204. African American Institutions. (3) Ethnographic study of religious, academic, political, economic, and business institutions of people of African descent as developed from their experience in both the old and new worlds through classroom lectures, directed field work, and research. *(On demand)*

AFRS 2205. African Culture. (3) Survey of Africa's lifestyles and other cultural manifestations with special emphasis on social behavior and traditional institutions as impacted by historical changes and contemporary developments. Research required. *(Yearly)*

AFRS 2206. African Literature, Music, and Art. (3) (W) Survey of socio-cultural context in which African literature, music, and art function; examination of the impact of changes resulting from international dependence and improved communications across continents and cultures; parallels drawn with other regions of the world, particularly the US and Europe. Creative research or community projects required. *(Yearly)*

AFRS 2207. Pan-Africanism. (3) Study of the Pan-African movement; examination of historical and contemporary efforts of peoples of African descent to unite their struggles for human advancement, political independence, and equality in Africa, the US, the Caribbean, Western Europe, and Afro-Latin American. Included in the study are popular movements, leading proponents, and related organizations. *(On demand)*

AFRS 2208. Education and African-Americans. (3) Examination of the problems and challenges of educating African-Americans. Topics include: conceptual approaches to education; historical and contemporary overview of education for African-Americans; the impact of race and discrimination; analysis of existing curricula; and suggested models for a multi-racial and multi-cultural education. (*On demand*)

AFRS 2215. Black Families in the United States. (3) (W) Critical and comprehensive examination of the life of African-American families in the United States including the historical evolution of black families and their relationship with the political-economic structures of American society. (*Yearly*)

AFRS 2221. Contemporary Africa. (3) Crosslisted as HIST 2211 and INT 2101. Study of Africa from the 1880s to the present. Focus on political and socio-economic changes and Africa's integration into the community of nations. *(Yearly)*

AFRS 2301. Introduction to African-American Literature. (3) Crosslisted as ENGL 2301. Prerequisite: ENGL 1101 and 1102 or 1103, or departmental permission. Survey of the major periods, texts, and issues in African-American Literature. Prerequisite to 4000 level African-American literature courses in English Department. *(Fall, Spring)*

AFRS 3050. Topics in Africana Studies. (3) Treatment of a special topic. May be repeated for credit as topics vary, with approval of department chair. *(Fall, Spring)*

AFRS 3101. Perspectives on Race and Ethnicity in the US. (3) Study of values and make-up of American pluralistic society in historical and contemporary context. Focus on the understanding of African American values and the role of ethnicity and race. *(On demand)*

AFRS 3150. The African-American Church and Civil Rights. (3) Crosslisted as RELS 3150. Role of the black church in the struggle for human equality. Topics include: Radical, moderate, and accommodationist leadership styles; historical development of the black Church in the South; and its emergence as a foundation for the modern civil rights movement. *(Yearly)*

AFRS 3179. African American Political Philosophy. (3) Crosslisted as POLS 3172. Prerequisite: 3000 level course on Africa from AFRS, POLS, or HIST. Analysis of competing ideologies in African American political philosophy. *(On demand)*

AFRS 3190. The Political Economy of the Caribbean. (3) An examination of the manifestations of Caribbean economic problems and policies and Caribbean political development from the post-war period to the present. (*On demand*)

AFRS 3200. Folklore of Africa and the African Diaspora. (3) A study of the relationships among African and African Diaspora folktales, folk beliefs, customs, legends, myths, proverbs, poetry, songs, performance, narratives, symbols, and social practices. Using an

interdisciplinary approach, the course will identify parallel tales and verbal and performance arts in the Mother Continent and the Diaspora and also study how geographical environments and historical experiences have impacted new manifestations of African folklore. *(On demand)*

AFRS 3210. Black Families in the Diaspora. (3) . Crosslisted as SOCY 3210 and LTAM 3110. This course is designed to acquaint students with historical and contemporary experiences of peoples of African descent in the Caribbean and Latin American countries with specific emphasis on family structure and family relationships. Includes discussion of theories, history, impact of globalization on family structure, roles of women and identity, socioeconomic status and mobility, slavery, colonialism, and capitalism. The course is designed to provide students with a better understanding of the comparative relationships and links between family structures and common life experiences among peoples of African descent in different parts of the world, with specific emphasis on the Caribbean and Latin American regions. *(On demand)*

AFRS 3218. Racial Violence, Colonial Times to Present. (3). Crosslisted as HIST 3218. This course examines the ways in which African-Americans and Whites used violence both as part of struggles for liberation and freedom as well as repression from the colonial period to the present in the United States. The focus will be on broader processes of social, political, and cultural change and at efforts to build cooperation. *(On demand)*

AFRS 3220. The Caribbean from Slavery to Independence. (3) Crosslisted as LTAM 3220 and HIST 3180. Covering the sweep of history from European/indigenous contact, through the construction of a plantation regime based on African slave labor, and up to the present day, this class explores the spread of colonialism, the dynamics of slavery, and the tumult of abolition and national independence movements. The Caribbean Sea will be examined as a region, emphasizing the ties uniting the islands and the circum-Caribbean coasts. The region's past – including empire and imperial conflict, racial oppression and interaction, and international contact – and its legacies will be discussed in relation to political economics, race, and contemporary culture. *(On demand)*

AFRS 3230. Poverty and Discrimination in African Diaspora in the Modern Era. (3) Socio-economic roots of poverty and discrimination in African America, the Caribbean, and Afro-Latin America; impact of anti-poverty and anti-discrimination laws and programs. *(On demand)*

AFRS 3240. African Americans and the Legal Process. (3) Crosslisted as HIST 3240. This course explores the unique role law has played in the African American experience, establishing the status of persons of African descent in America. Students will investigate how the legal history of African Americans has shaped American race relations over the past 400 years by tracing the evolution of race, racism, and racial formations as a function of America's legal system. *(On demand)*

AFRS 3250. Political Economy of African America. (3) Examination of the problems and issues affecting the economic base and human security of African Americans and their role in the US economy. *(On demand)*

AFRS 3260. Slavery, Racism and Colonialism in the African Diaspora. (3) Crosslisted as LTAM 3260 and HIST 3190. This course is designed to explore how race and racism, slavery, and colonialism served as principal institutions and constructs shaping the experience between Africa and the emerging African Diaspora in the New World. Students will consider how the maintenance of Western social, economic, and political superiority materialized as functions of these three important historical developments. *(On demand)*

AFRS 3265. African Economic Development. (3) Focus on economic theories, planning, production, and resource allocation strategies, capital formation, foreign aid, and multinational corporations in Africa. (*On demand*)

AFRS 3270. Afro-Latin American History. (3) Crosslisted as LTAM 3270 and HIST 3181. This course explores the African Diaspora in Latin America ranging from the Caribbean Sea to the Rio de la Plata. From slavery, to fighting for freedom in the Spanish-American Wars of Independence, to forging new notions of citizenship in twentieth century Brazil, African-descended peoples have an important place in Latin America's historical past. According special attention to regions with concentrated populations of African-descended peoples, this course reveals the vibrant history of Afro-Latin America. *(On demand)*

AFRS 3278. Race in the History of Brazil. (3) Crosslisted as LTAM 3278 and HIST 3178. Examining the history of Brazil since Portuguese colonization, this course focuses on experiences, struggles, and debates revolving around questions of race and identity. The course interrogates the construction of a slave society, abolition, negotiation of freedom for slaves, and debates around national identity that attended the formation of the Brazilian republic and which have shaped the country in the 20th century. The Brazilian experience will be approached comparatively, using the United States and other areas of the African Diaspora for context. *(On demand)*

AFRS 3280. Blacks in Urban America. (3). Crosslisted as HIST 3280. African-Americans have been part of the urban scene since the colonizing of the Americas. The course will examine the ways in which their presence in cities has both exemplified and contradicted the understanding of both urban development and race relations in America from colonial times to the present. *(On demand)*

AFRS 3290. Research Methods. (3) (O) Prerequisite: completion of sophomore-year courses or instructor's permission. Design of a research project with emphasis on developing sound research skills and methods. (*Fall*)

AFRS 3692. Colloquium. (3) (W) Prerequisite: Permission of the instructor. A weekly colloquium; research and writing; opportunity for intellectual stimulation, critique and problem solving. Open to majors and non-majors. (*On demand*)

AFRS 3895. Independent Study. (1-3) Prerequisite: Permission of the department. Supervised investigation of a problem or subject in the field of Africana Studies. May be repeated for credit. *(Fall, Spring)*

AFRS 3990. Senior Project in Africana Studies. (2-15) Prerequisite: Completion of junior-year courses. Completion of a senior research paper on an academic topic or a community-related written project. Emphasis on mastery of academic skills and content of the field or specific discipline. *(On demand)*

AFRS 4000. Senior Seminar in Africana Studies. (3) Prerequisites: Completion of junior-year courses. This advanced seminar explores a wide-body of literature selected as the eminent scholarship in the field of Africana Studies. Students will read, analyze, and critique the scholarly literature of the field and prepare written assignments conceptualizing the course readings and discussions. *(Spring)*

AFRS 4050. Topics in Africana Studies. (3) Treatment of a special topic. May be repeated for credit as topics vary, with the approval of the department chair. *(Fall, Spring)*

AFRS 4101. Modern African Literature in English. (3) Prerequisite: Junior standing. AFRS 1100 or 2206 for AFRS majors. Topics include: Traditional African and Western literary influences, the culture debate, post-independence satire, decolonization of African literature, apartheid, and women writers. *(On demand)*

AFRS 4102. Caribbean Literature in English. (3) Prerequisite: junior standing; at least one course in AFRS for AFRS majors. Topics include: loneliness, quest for identity, nationalism, protest, and the use of patois. *(On demand)*

AFRS 4103. Warfare, the Military, and Civil Wars in Africa. (3) Prerequisite: 3000 or above course on Africa. Nature and conduct of warfare in ancient and modern times in Africa, including technology and strategy; analysis of events and institutions using military means such as civil wars, liberation and secession movements, the army, and their impact on African societies. (*On demand*)

AFRS 4105. Foreign Policy of African States. (3) Crosslisted as POLS 3169. Prerequisite: upper-level course on Africa. A theoretical approach to the study of the external and internal factors influencing the development, implementation, and conduct of foreign policy of African States. (*Yearly*)

AFRS 4106. Gender and African-American Literature. (3) Crosslisted as ENGL 4156. Prerequisites: ENGL 2100 and 2301, or permission of instructor or graduate status. Exploration of the intersection of gender and African-American Literature, focusing on either Black women writers or Black male writers, or a combination in dialogue. *(Alternate years)*

AFRS 4107. African-American Poetry. (3) Crosslisted as ENGL 4157. Prerequisites: ENGL 2100 and 2301, or permission of instructor or graduate status. Intensive study of African- American poetry, focusing on one period or traversing several. *(Alternate years)*

AFRS 4108. African American Literary Theory and Criticism. (3) Crosslisted as ENGL 4158. Prerequisites: ENGL 2100 or 2301, or permission of instructor, or graduate status. History of an African American approach to literary analysis, including a practicum in modern criticism. *(Alternate years)*

AMERICAN STUDIES (AMST)

AMST 2050. Topics in American Studies. (3) An introduction to the interdisciplinary approach focusing on aspects of American culture and society. May be repeated for credit with permission of the student's advisor as topics vary. *(Fall, Spring) (Evenings)*

AMST 2100. Introduction to American Indian Studies. (3) An introduction to the study of the American Indian experience through selected academic disciplines (e.g. anthropology, history, political science, religious studies) and American Indian intellectual perspectives on, and response to, these disciplines. *(On demand)*

AMST 3000. Seminar in American Studies. (3) (W) (O) An in-depth treatment of an American topic using an interdisciplinary and writing-intensive approach. May be repeated for credit with permission of the student's advisor as topics vary. *(Fall, Spring) (Evenings)*

AMST 3050. Topics in American Studies. (3) Introduction to the interdisciplinary approach, demonstrating how traditionally distinct disciplines, such as literature and history, or art and political science, interrelate and contribute to an understanding of an American topic. May be repeated for credit with permission of the student's advisor as topics vary. *(Fall, Spring) (Evenings)*

AMST 3090. Topics in American Film. (3) An in-depth treatment of an American film director, subject, or genre. May be repeated for credit with permission of the student's advisor as topics vary. *(Fall, Spring) (Evenings)*

AMST 3100. Introduction to American Studies. (3) Introduction to American culture through an in-depth study of a single decade or era, such as the 1830s, 1890s, 1920s, 1950s or 1960s. Focus on how diverse social, economic, artistic, literary, philosophical, and political forces have shaped American society. Students examine the complex and multifaceted nature of American culture, both as it pertains to the specific era

under study and to the present day. May be repeated for credit with permission of the student's advisor, as decades vary. (*Fall, Spring*) *(Evenings)*

AMST 3210. Childhood in America. (3) Exploration of the changing nature of childhood in American society. Examines how social and economic developments have affected the child's position in the family, the workplace, and the school. Child-rearing philosophies and techniques from the colonial period to the present and the history of children's literature, toys, and entertainment will be studied. *(On demand)*

AMST 3800. Independent Study or Directed Reading in American Studies. (1-3) May be repeated once for credit, with permission of the student's advisor. (Not limited to American Studies students but should be under the supervision of an American Studies advisor or designate.) (*On demand*)

AMST 4050. Topics in American Studies. (3) In-depth study using an interdisciplinary approach focusing on aspects of American culture and society. May be repeated for credit with permission of the student's advisor as topics vary. *(Fall, Spring) (Evenings)*

ANTHROPOLOGY (ANTH)

ANTH 1101. Introduction to Anthropology. (3) Biological and cultural evolution; archeology; language and culture; comparative study of human social institutions such as kinship, subsistence patterns, religion, politics; methods, and theories. (*Fall, Spring, Summer) (Evenings*)

ANTH 2010. Topics in Ethnography. (3) Investigation of ethnographic regions of the world. May be repeated for credit as topics vary. Examples: Cultures of the Pacific; Cultures of the Mediterranean. *(On demand)*

ANTH 2050. Topics in Archaeology. (3) Specialized topics in archaeology. May be repeated for credit as topics vary. Examples: Historic Archaeology. (*On demand*)

ANTH 2090. Topics in Anthropology. (1-3) Specialized topics in anthropology. May be repeated for credit as topics vary. Examples: Hunters and Gatherers; Political Anthropology. *(On demand)*

ANTH 2111. Peoples of Africa. (3) Ethnic and linguistic diversity in Sub-Saharan Africa; ecology and culture; patterns of continuity and change in kinship, marriage, economy, social control, stratification, and religion. (*On demand*)

ANTH 2112. North American Indians. (3) Survey of the native peoples of America; culture at the time of European contact; major historical events and relationships; contemporary issues in Indian affairs. (*On demand*)

ANTH 2113. Cultures of Russia and East Europe. (3) Prerequisites: None. Examination of former socialist countries of Russia and East Europe. Ideology and practice of socialism, ethnic relations, reunification, and cultural changes in gender roles, economy, religious practice, and popular culture. *(Alternate years)*

ANTH 2114. Indians of the Southeastern United States. (3) Study of American Indians of the Southeastern United States with emphasis on tribes of the Carolinas. Areas of investigation include pre-contact cultures, Indian-European contact relationships, history, and contemporary Southeastern Indian issues. (*On demand*)

ANTH 2115. Culture and Society in the Middle East. (3) Patterns of subsistence, social and political organization in North Africa and the Middle East. Changes in family and community structures, migration, gender roles, and religious outlook since the colonial period. *(Alternate years)*

ANTH 2116. Contemporary Latin America. (3) A survey of the people and cultures of Mexico, Central America, South America, and the Caribbean. Areas of investigation include religion, race, ethnicity, gender, kinship, social inequality, and economic development. *(Yearly)*

ANTH 2117. Cultures of the Caribbean. (3) Prerequisites: None. An introduction to society and culture in the Caribbean region. Areas of investigation include ethnicity, nationalism, family and community structure, economy, religion, and politics. *(Yearly)*

ANTH 2121. Comparative Family Systems. (3) Cross-cultural survey of the origins and forms of the human family and interrelationships with other cultural institutions; role of the family in kinship, marriage, childrearing, sex roles, economics, political organization, and religion. (*On demand*)

ANTH 2122. Beliefs, Symbols and Rituals. (3) Structure and content of systems of belief and ritual; role in social life; analysis of religion, myth, magic, witchcraft, symbol systems, cult movements, and religious change. (*Yearly*)

ANTH 2123. Women in Cross Cultural Perspective (3) A cross-cultural survey of the lives of women and the dynamics of gender throughout the world. Uses anthropological research to examine how gender influences evolution, social stratification, work, kinship, and perceptions of the body. *(Alternate years)*

ANTH 2125. Urban Anthropology. (3) Cross-cultural analysis of urban life; rise of early cities; rural-urban differences; migration; ethnicity, urban poverty; effects of urban life on kinship systems; modernization. (*On demand*)

ANTH 2126. World Population Problems. (3) (W) Crosslisted as SOCY 2126. Prerequisites: None. An examination of various world population "problems," such as growth, migration, fertility, and population aging, in order to learn how cultural, political, economic, and environmental factors influence and are influenced

by the population structure of a given society. *(On demand)*

ANTH 2141. Principles of Biological Anthropology. (4) Corequisite: ANTH 2141L. Evolutionary theory; primates; primate and human evolution; population genetics; human variation, osteology; bioethics. *(Fall, Spring)*

ANTH 2141L. Principles of Biological Anthropology Lab. (0) Corequisite: ANTH 2141. Two hour laboratory session per week. In depth discussion and debate of assigned readings and anthropological issues presented in lecture and films; hands-on experience with human osteological material, skeletal material of living primates, and casts of major fossil primate and hominids.

ANTH 2142. Primate Behavior. (3) Primate evolution, taxonomy, social behavior, ecology, reproductive strategies; monkeys, apes and human beings; communication, aggression, mother-infant bonding, sociobiology; field-work, conservation. (*On demand*)

ANTH 2151. Introduction to Archaeology. (3) Archaeological method and theory; important archaeological sites and cultures from Old and New Worlds; ethics and public policy in archeology. (*Fall*)

ANTH 2152. New World Archaeology. (3) Crosslisted as LTAM 2252. Prehistory of North America; Paleoindians, Eastern United States, Southwest, Mexico; archaeological methods and theory. (*Spring*)

ANTH 3090. Topics in Anthropology. (1-3) Prerequisite: ANTH 1101 or permission of the instructor. Examination of specialized topics in anthropology. May be repeated for credit as topics vary. Examples: Anthropological Genetics, Ecological Anthropology. *(On demand)*

ANTH 3101. Foundations of Anthropological Theory. (3) Prerequisites: ANTH 1101 and junior standing. History of anthropological theory; the anthropological perspective in the social sciences; current theoretical and methodological issues in anthropology; presenting anthropology through writing and speaking. *(Fall)*

ANTH 3111. Applied Anthropology. (3) Prerequisite: ANTH 1101 or permission of instructor. Cultural dynamics; agents and conditions promoting change; theories and methods of applied anthropology in health care, education, development, business. (*Yearly*)

ANTH 3112. Globalization and Culture. (3) Crosslisted as INTL 3112. This course explores the relationship between processes of globalization and cultural change. It will consider the breakdown of the connection between lived cultural experience and territorial location. Of special interest will be issues of cultural homogenization, cultural hybridization and emergent cultural identities brought about by the flows of people, ideas and objects in the contemporary world. *(Yearly)*

ANTH 3113. Economic Anthropology. (3) Prerequisites: ANTH 1101 or ECON 1101 or ECON 2102 or permission of the instructor. Intellectual roots of anthropological approaches to economy, formalist-substantivist debate, distribution and exchange, commodities, consumption, and material culture. *(Alternate years)*

ANTH 3122. Culture, Health and Disease. (3) (W) Relationship between cultural beliefs and practices and patterns of health and illness in human populations; role of disease in ecology and epidemiology, nutrition, cultural systems of healing, roles of patient and healer, culture and emotional states, role of religion, and magic in healing. (*Yearly*)

ANTH 3124. Food, Nutrition and Culture. (3) Prerequisite: ANTH 1101 or permission of instructor. An examination of how food provides special insight into cultures throughout the world. Topics include the symbolic and social value of food, the social construction of taste, dietary change, food and health, cannibalism, and famine. *(Yearly)*

ANTH 3132. Aging and Culture. (3) (W) Examination of the processes of aging in various cultural contexts, with emphasis on the implications for understanding aging within American society. Application of anthropological theories and methods to the study of aging. *(On demand)*

ANTH 3140. Forensic Anthropology. (3) Comparative human anatomy and biological anthropology applied to modern problems in the identification of human remains. Recovery, identification, and interpretation of human remains from archaeological, criminal, and disaster investigations. *(On demand)*

ANTH 3152. Early Civilizations. (3) Prerequisite: ANTH 1101 or 2151 or permission of instructor. Great civilizations of Old and New Worlds; Mesopotamia, India, Greece, Africa, Egypt, China, Mexico, Peru; theories of cultural evolution; beginnings of complex societies; archeological theory and method, environment, and ecology of first civilizations. (*Alternate years*)

ANTH 3153. Archaeological Analysis. (3) Prerequisite: ANTH 2151 or permission of the instructor. Advanced study of archaeological method and theory; analytical methods; statistics in archeology. (*On demand*)

ANTH 3154. European Prehistory. (3) Prerequisite: ANTH 1101 or 2151 or permission of the instructor. Prehistory of Europe; Paleolithic, Neolithic, Bronze Age, Iron Age; archeological methods and theory; ecology and social systems of early European cultures. (*On demand*)

ANTH 3155. Ancient Latin America. (3) Crosslisted as LTAM 3255. Archeology and ethnohistory of the Aztecs, Maya, Inca, and their predecessors; includes an investigation of prehistoric urbanism, the rise and fall of complex societies, and the application of archaeological methods to complex societies. *(Yearly)*

ANTH 3222. Culture, Health and Disease. (3) Same as ANTH 3122, but not a Writing Intensive (W) course. *(Yearly)*

ANTH 3480. Internship in Anthropology. (3) Prerequisite: permission of the department. Research and/or in-service training experience in a cooperating community organization, based upon a contractual agreement between the student, Department, and community organization. May be repeated for credit up to a maximum of six semester hours. *(Pass/No Credit basis) (Fall, Spring, Summer)*

ANTH 3482. Teaching Internship in Anthropology. (3) Prerequisite: at least junior standing and permission of the Department. Teaching assistant experience in introductory anthropology. Includes conducting review sessions, lecturing, assisting faculty member with exams, and related activities. May be repeated for credit up to six hours. *(Honors/Pass/No credit) (Fall, Spring)*

ANTH 3895. Directed Individual Study. (1-4) Prerequisite: ANTH 1101 and permission of the department. Supervised investigation of specialized topics in anthropology. May be repeated for credit: up to six hours may be applied to the major. (*Fall, Spring, Summer*)

ANTH 4090. Topics in Anthropology. (1-3) Prerequisite: ANTH 1101 or permission of instructor. Examination of specialized topics in anthropology. May be repeated for credit as topics vary. Examples: Anthropology and Globalism; Race, Culture, and Society. (*On demand*)

ANTH 4110. American Ethnic Cultures. (3) Prerequisite: ANTH 1101 or permission of instructor. An anthropological and ethnohistorical survey of ethnicity, persistence and cultures of the ethnic groups of America. Topics include theories of ethnicity, immigration, ethnic identity, reasons for immigration, acculturation experiences, and cultural characteristics of established and more recent ethnic groups. (*On demand*)

ANTH 4120. Intercultural Communications. (3) Prerequisite: ANTH 1101 or permission of instructor. Learning to cope with cultural differences; contrasting value systems; cross-cultural and communication styles; nonverbal communication; cultural relativity; culture and perception; ethnocentricism; cultural shock. (*On demand*)

ANTH 4122. Ethnographic Methods. (3) Prerequisites: At least 6 hours in ANTH courses or permission of the instructor. This course provides students with a basic mastery of the key methods used in cultural anthropological research. *(Alternate years)*

ANTH 4131. Culture, Pregnancy and Birth. (3) Crosslisted as WMST 4131. This course explores how culture shapes the experience and practice of pregnancy and birth. Some of the topics we will explore include the birthing experience, midwifery, infertility, new reproductive technologies, and surrogate motherhood. *(On demand)*

ANTH 4140. Field Biology of the Primates. (3) Prerequisite: at least junior standing; ANTH 2141 and ANTH 2142 or permission of instructor. The theory and methods utilized in the study of nonhuman primate behavior. This applied behavioral primatology course entails original research projects done at an appropriate zoological venue in North and South Carolina. *(Summer)*

ANTH 4453. Field Project in Archaeology. (1-4) Prerequisite: ANTH 1101 or 2151 and permission of the instructor. Practical experience in archaeological techniques. Students will participate in field research on an historic or prehistoric archeological site. Research may include field reconnaissance, excavation, mapping, systematic description and analysis of cultural material, and/or other techniques appropriate to the site and research problem. May be repeated for credit as projects vary. Up to six hours of credit may be applied toward the anthropology major. *(Honors/Pass/No credit)* (*Summer*)

ANTH 4601. Seminar in General Anthropology. (3) (W) (O) Prerequisite: ANTH 3101 and senior standing. For majors only. Synthesis and integration of subfields of anthropology with emphasis on accomplishing original research, and written and oral presentation in anthropology. (O credit will be received only after successful completion of 3101 and 4601.) *(Spring)*

ANTH 4615. Readings in Middle East Ethnography. (3) Seminar exploring both historically significant and recent ethnographies on selected topics. Examples include Israel/Palestine, Women in the Middle East, and Tribe, State, and Nation in the Middle East. May be repeated for credit as topics vary. *(On demand)*

ANTH 4616. Culture and Conflict in the Amazon. (3) This course examines the development strategies Brazil has used in the Amazon and explores how these policies have affected both the environment and the various populations living in the Amazon. Topics covered include environmental degradation, human rights abuses, culture change, migration, and globalization. *(On demand)*

ANTH 4622. Readings in the Anthropology of Religion. (3) Seminar exploring both historically significant and recent ethnographies of religion. Examples include Islam, Religion and the Senses in the Muslim World, Shamanism, Comparative Ethnography of Religion. May be repeated for credit as topics vary. *(On demand)*

ANTH 4701. Honors Research in Anthropology. (3) Prerequisite: Acceptance into the departmental honors program and permission of the department. Independent Honors project; proposal, literature review, and research for project to be completed in ANTH 4601. *(Honors/Pass/No Credit)*

ARCHITECTURE (ARCH)

ARCH 1101. Architecture Design Studio. (5) This course begins the architectural design sequence. The studio allows students to gain a working knowledge of important studio skills, processes and methods, and develop creative and independent thinking through two- and three-dimensional design problems. *(Fall)*

ARCH 1102. Architecture Design Studio. (5) This course continues the architectural design studio sequence, expanding the base of architectural skills, processes, methods, principles, and issues which affect the built environment we inhabit. Design is introduced as a conceptual discipline involving analysis, interpretation, syntheses, and transformation of the physical environment. *(Spring)*

ARCH 1601. Recording Observations. (2) Projects, lectures, demonstrations, and exercises are used to introduce the skill of freehand drawing. The aim is to understand drawing as a vital means to see, represent, and understand essential aspects of the visual environment. *(Fall)*

ARCH 1602. Components of Form. (2) Projects, lectures, demonstrations, and exercises are used to introduce the skill of freehand drawing. The aim is to understand drawing as a vital means to see, represent, and understand essential aspects of the visual environment. *(Spring)*

ARCH 2101. Architecture Design. (5) Prerequisites: ARCH 1102 and 1602. Corequisite: ARCH 2601. Studios emphasizing the significant purposes for building; understanding the theoretical, technical and symbolic consideration of the environment relative to intervention, and intentions from behavioral information toward a comprehensive design process. (*Fall*)

ARCH 2102. Architectural Design Studio. (5) Prerequisites: ARCH 2101 and 2601. Studios concentrating on the development, experimentation, and understanding of the range, potential, materials, systems, and methods in the use of architectural technologies. (*Spring*)

ARCH 2601. Architectural Seminar. (3) (W) Prerequisites: ARCH 1602 and 1102. Corequisite: ARCH 2101. This seminar introduces models of design process to build judgmental capacity in the areas of function, spatial organization, culture, and landscape. Site planning is presented both as a technical demand and a formal device. Lectures, demonstrations, and design workshops are used to build skill. (*Fall*)

ARCH 3101. Architecture Design Studio. (5) Prerequisites: ARCH 2102. Third year design studios continue the five-year studio sequence with a focus on three areas of inquiry: *tectonics* - defined as the material, detail, and structure as form-generating influences; *enclosure* - defined as making space with regard to use and human ritual; and *envelope* - defined as building edge and surface in technical terms and signification. (*Fall*)

ARCH 3102. Architecture Design Studio. (5) Prerequisite: ARCH 3101. Continuation of ARCH 3101. The final studio in the Core Program examines the relationship of building to site and context in both environmental and social terms. Site planning, adjacency, contextualism, land and landscape, building grouping, and urban occupancy are included in projects. (*Spring*)

ARCH 4050. Architecture Elective – Topics. (3) Concentrated, in-depth study of selected topic. Topics vary according to faculty expertise and often include contemporary theoretical, social, technological, and design issues. *(Fall, Spring)*

ARCH 4101. Topical Architectural Studio. (5) Prerequisite: ARCH 3102. Various studio topics are offered with different emphasis and subject concentration to allow students to in-depth studio experiences in particular areas of study. (*Fall*)

ARCH 4102. Topical Architectural Studio. (5) Prerequisite: ARCH 4101. Series of studio sections offered with different emphasis and subject concentration to allow students to obtain a variety of studio experiences and pursue an individual area of study. (*Spring*)

ARCH 4103. Project Document. (6) Completion of a Project Document which provides for design research, analysis, development and synthesis (oral, written, and graphics) of a building program, site, and design premise. *(Fall)*

ARCH 4104. Thesis Studio. (6) Completion of a Comprehensive Architectural Project design including oral and visual presentation of design development, final project design, and refinement of Project Document (ARCH 4103). *(Spring)*

ARCH 4112. Professional Practice. (3) Corequisite: ARCH 4104. Learning objectives include an understanding of the practice of architecture today, its responsibilities and procedures, and emerging alternative forms of practice and roles of the architect. *(Spring)*

ARCH 4211. Architectural History 1. (3) Study of the theoretical, technical, and cultural background of architecture and urban design from prehistory to 1750. *(Fall)*

ARCH 4212. Architectural History 2. (3) Study of the theoretical, technical, and cultural background of architecture and urban design from 1750 to present. *(Spring)*

ARCH 4213. Architectural History Elective. (3) Prerequisite: ARCH 4212 or permission of instructor. Study of topical areas of history and theory of architecture. These courses are required for architecture majors (6 credit hours) to complement the required

survey courses (ARCH 4211 and 4212) to develop in-depth research, writing, and presentation skills. *(Fall)*

ARCH 4214. Architectural History Elective. (3) Prerequisite: ARCH 4212 or permission of instructor. Study of topical areas of history and theory of architecture. These courses are required for architecture majors (6 credit hours) to complement the required survey courses (ARCH 4211 and 4212) to develop in-depth research, writing, and presentation skills. *(Spring)*

ARCH 4312. Architectural Materials. (3) Introduces quantitative and qualitative characteristics and physical properties of architectural materials, systems, details and processes. Topics include masonry, concrete, wood, steel, glazing, cladding, roofing and flooring materials, and assemblies. *(Spring)*

ARCH 4313. Structures 1. (3) Prerequisite: ARCH 4312. Introduces: 1) the fundamentals of structures including statics, strength and stability of materials, 2) structural concepts, systems, and the tracing of structural loads using basic principles, physical modeling, and theoretical and analytical methods, 3) the interrelationship between strain, stress, and stability, and the implications of tension, compression, shear, torsion, and bending. *(Fall)*

ARCH 4314. Structures 2. (3) Prerequisites: ARCH 4312 & 4313. This course introduces specific structural applications of wood, steel, concrete, and masonry systems commonly used in small-scale commercial/institutional buildings. Students will be introduced to the design of beams, columns, walls, joinery, and connections appropriate to each material type through theoretical, analytical, and computer simulation methods. *(Spring)*

ARCH 4315. Environmental Control Systems. (3) Prerequisites: ARCH 4312. Introduces: 1) qualitative and quantitative methods to assess the impact of environmental forces on thermal and luminous comfort, energy performance, and regional sustainability; 2) the interplay between climatic events, building use, and the variables that influence building systems technology; and 3) building envelope performance, and passive and mechanical systems for heating, cooling, illuminating, and ventilating. *(Fall)*

ARCH 4317. Building Systems Integration. (3) Introduces advanced issues related to the comprehensive integration of building technology systems commonly used in large-scale buildings including large-scale building structures, materials, environmental, mechanical, electrical, life safety, building water supply and waste, and conveying systems through case study, analytical, and simulation methods. *(Fall)*

ARCH 4890. Directed Independent Study. (1-3) Prerequisite: major in Architecture. This course is designed to allow students to pursue faculty-directed independent study topics not provided by other College offerings. May be repeated for credit with the approval of the College. Requires permission from Chair of Instruction. (*Fall, Spring*)

ARTS AND SCIENCES (ARSC)

ARSC 1000. Freshman Seminar. (3) Designed to assist with the intellectual and social transition from high school to college by developing positive attitudes toward learning and increasing the involvement of students in the intellectual life of the campus; providing an orientation to resources available to students; and promoting problem solving and writing skills. Each section will be developed around a content theme, usually selected from the instructor's discipline. (*Fall*)

ARSC 1101. "Advantage: Connecting with College." (3) (W) A summer program for college freshmen. During this program, students take two courses and earn six credit hours. The morning course is an elective chosen from a list of specially selected Department courses. The afternoon is ARSC 1101, Connecting with College. All sections work from a common syllabus. All Advantage courses, both the morning and afternoon courses, meet for the required number of 45 contact hours. *(Summer)*

ARSC 2000. University Learning Seminar. (1-3) Prerequisite: permission of the College of Arts and Sciences. Provides instruction in basic computer literacy, critical thinking skills, reading comprehension, written and oral communication skills. Each section will be developed around a content theme selected from instructor's discipline. Designed for transfer students in making intellectual and social transition to the University learning environment. Students who have previously taken ARSC 1000 may not receive credit for this course. *(Fall, Spring)*

ARSC 3000. Topics in Arts and Sciences. (3) Prerequisites: junior standing and permission of the sponsoring departments. Topics chosen from the general area of the arts and sciences in order to demonstrate relationships and interdisciplinary influences. May be repeated for credit as topics vary with permission of the student's major Department. Can be used toward general degree requirements as indicated each time the course is offered. (*On demand*)

ARSC 3201. Instructional Technology Design. (3) Prerequisite: sophomore standing, application of technology skills and permission from instructor. Area of study will focus on instructional design, web page development, electronic presentation and technology solutions. Students in this course will work closely with the faculty on instructional technology projects. *(Fall, Spring)*

ARSC 3400. Non-Residential Studies. (1-15) Experience outside the University which provides an alternative learning opportunity to broaden understanding of the major and provide an introduction to various careers. All arrangements for non-residential study must be approved in advance and include a

written proposal of goals, methods, duration, hours credit, and evaluation procedures. The University Career Center is available to assist students to locate appropriate work experiences. Student projects will be approved, supervised, and evaluated within the student's major Department. Grading by a faculty advisor may be on a *Pass/No Credit basis*, ordinarily to be taken in the Junior or Senior year. No more than 15 hours of non-residential studies may be presented toward a degree. (Cannot be used toward general degree requirements.) Contact major Department or University Career Center for information. (*On demand*)

ARSC 3480. Citizenship and Service Practicum. (3) (W) An interdisciplinary, experiential learning course which examines the relationship between citizenship and service to one's community. Lectures, reading, and seminars explore the historical, ethical, and political foundations of voluntary service for issues such as poverty, homelessness, and social justice. Course meets for two hours of lecture/discussion per week and requires completion of 40 hours of voluntary service in the community. *(Fall, Spring, Summer)*

ARSC 3500. Cooperative Education and 49ership Experience. (0) Prerequisites: Departmental GPA and credit hours required and approval by the departmental Co-op Coordinator in conjunction with the University Career Center. Enrollment in this course is required for Arts and Sciences students involved in professional work experiences offered through either the 49ership program, or the parallel co-op (part-time work) or the alternating co-op (full-time work) option of the cooperative education program. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For information, contact the University Career Center. *(Fall, Spring, Summer)*

ART (ARTA-ARTZ)

Course offerings are listed by number within area of study.

Academic and Departmental Art (ARTA)

ARTA 2800. Directed Studies in Art. (1-3) Prerequisite: Permission of instructor and department. Directed individual research in a particular artistic field of interest not otherwise offered. May be repeated for credit. *(Fall, Spring, Summer)*

ARTA 3000. Topics in Art. (1-3) Special topic in art. May be repeated for credit with change in topic. *(On demand)*

ARTA 3101. Art Writing. (3) (W) Crosslisted as JOUR 3050. Prerequisite: Permission of instructor for non-majors. Priority for Art and Architecture majors. Intensive writing experience in the forms of writing commonly employed in the visual arts: criticism, journalism, historical research, personal essay. *(On demand)*

ARTA 3201. Graphic Design and Illustration BFA Portfolio Review. (1) Prerequisites: 'C' or above in ARTH 1211, ARTH 1212, ARTB 1201, ARTB 1202, ARTB 1203, completion of or concurrent enrollment in ARTB 1205 and ARTB 1206, and completion of ARTG 2181 or ARTL 2186, depending on concentration. Six seminar style classes provide guidance with written statements, documentation of artwork and presentation format. Guest speakers present information related to the portfolio packet, eventual career paths and exhibition issues. Portfolio is due during the seventh week of the semester. Repeat for credit when applying to a second concentration area. *(Pass/No Credit) (Fall, Spring)*

ARTA 3202. 2D BFA Portfolio Review. (1) Prerequisites: 'C' or above in ARTH 1211, ARTH 1212, ARTB 1201, ARTB 1202, ARTB 1203, completion of or concurrent enrollment in ARTB 1205 and ARTB 1206, and completion of ARTP 2131, or ARTR 2161, or ARTR 2162, or ARTT 2191, depending on concentration. Six seminar style classes provide guidance with written statements, documentation of artwork and presentation format. Guest speakers present information related to the portfolio packet, eventual career paths and exhibition issues. Portfolio is due during the seventh week of the semester. Repeat for credit when applying to a second 2D concentration area. *(Pass/No Credit) (Fall, Spring)*

ARTA 3203. 3D BFA Portfolio Review. (1) Prerequisites: 'C' or above in ARTH 1211, ARTH 1212, ARTB 1201, ARTB 1202, ARTB 1203, completion of or concurrent enrollment in ARTB 1205 and ARTB 1206, and completion of ARTC 2171, or ARTC 2172, or ARTF 2151, or ARTZ 2141, depending on concentration. Six seminar style classes provide guidance with written statements, documentation of artwork and presentation format. Guest speakers present information related to the portfolio packet, eventual career paths and exhibition issues. Portfolio is due during the seventh week of the semester. Repeat for credit when applying to a second 3D concentration area. *(Pass/No Credit) (Fall, Spring)*

ARTA 3400. Internship in the Arts. (1-3) Prerequisite: Permission of sponsor and instructor. Non-salaried opportunity for students to observe, examine, and participate in the creative dynamics and procedural operations of an art organization, arts related business, professional artist's studio, or expert craftsworker. Sponsor supervised. Six to twelve hours per week. Repeat for credit with different sponsors. *(Pass/No Credit grade evaluation) (Fall, Spring, Summer)*

ARTA 3402. Gallery Internship. (3) Participation in all phases of exhibition selection, preparation, and presentation in four campus galleries under supervision

of campus galleries coordinator. An average of eight hours per week for a total of 120 hours. May be repeated one time for credit. *(Fall, Spring)*

ARTA 4600. Senior Seminar. (3) (W) (O) Prerequisite: Art majors in either of final two semesters in art program. Seminar and intensive writing experience explores a variety of general issues in contemporary art with an emphasis on career questions faced by graduating seniors. *(Fall, Spring)*

ARTA 3800. Independent Study in Art. (1-3) Prerequisite: permission of instructor and department. Supervised individual research of artistic problems with appropriate documentation of the results. May be repeated for credit. *(Fall, Spring, Summer)*

ARTA 3801. Visual Arts Workshop. (1-6) Prerequisite: Permission of instructor. Contracted and pre-approved arrangements for student to receive credit for visual arts workshops conducted outside the University's course offerings. May be repeated for credit. *(Fall, Spring, Summer)*

ARTA 4601. BFA Senior Exhibit. (1) Prerequisites: Senior status, ARTA 3201, 3202, or 3203, concurrently enrolled in the final Projects class in the concentration. BFA candidates will prepare, install, and exhibit a body of work to fulfill BFA exit requirement. Repeat for credit with change in concentration. *(Pass/No Credit) (Fall, Spring)*

Basic Foundation Studios (ARTB)

ARTB 1201. 2D Design. (3) The two-dimensional surface and its structural possibilities (i.e., graphics, photography, painting); elements of plastic expression related to increased complexity of space and form. Priority for majors. Six contact hours. *(Fall, Spring)*

ARTB 1202. 3D Design. (3) A beginning studio emphasizing experimentation with design and materials as related to the exploration of form and space in three dimensions. Priority for majors. Six contact hours. *(Fall, Spring)*

ARTB 1203. Drawing I. (3) Introduction to drawing involving skills and theory including perspective, proportion, and rendering in a variety of media and techniques. Priority for majors. Six contact hours. *(Fall, Spring)*

ARTB 1205. Figure Drawing I. (3) Prerequisite: 'C' or above in ARTB 1203 or permission of instructor. The figure as it relates to form, contour, and movement; an anatomical study emphasizing the relationships of skeletal and muscle organization and other referents in the development of graphic skills and vocabulary. Six contact hours. *(Fall, Spring)*

ARTB 1206. Concept Studio. (3) Introduction to: 1.) critical and creative thinking and its application to visual art; 2.) historical changes in the way cultures see, think, and produce; 3.) the breadth of contemporary art practice. Four contact hours. *(Fall, Spring)*

Ceramics (ARTC)

ARTC 2171. Ceramics Handbuilding. (3) Introduction to handbuilt forming methods, concept development, ceramic materials, and firing procedures. Six contact hours. *(Fall, Spring)*

ARTC 2172. Ceramics Wheel 1. (3) Introduction to wheel forming methods and emphasis on skill development, design, glaze application, utilitarian and sculptural concepts, and basic high-fire techniques. Six contact hours. *(Fall, Spring)*

ARTC 3071. Topics in Ceramics. (1-3) Special topics in ceramics. May be repeated for credit with change in topic. *(On demand)*

ARTC 3171. Ceramic Sculpture. (3) Prerequisite: 'C' or above in ARTC 2171. Intermediate studio emphasizing sculptural techniques, concepts, and design. Six contact hours. *(Fall, Spring)*

ARTC 3172. Ceramics Wheel 2. (3) Prerequisites: 'C' or above in ARTC 2172. Continuation of ARTC 2172 emphasizing development of skills, materials, high temperature firing techniques, design concepts related to utility and sculpture. Six contact hours. *(Fall, Spring)*

ARTC 3273. Ceramics 3. (3) Prerequisites: Choose two of the following in sequence: 'C' or above in ARTC 2171 and ARTC 3171 or ARTC 2172 and ARTC 3172. Intermediate development of skills and concepts. More advanced materials and firing techniques. Six contact hours. *(Fall, Spring)*

ARTC 3274. Ceramics 4. (3) Prerequisites: 'C' or above in ARTC 3273 and at least one of the following: ARTA 3201, 3202, or 3203. Continuation of ARTC 3273. Six contact hours. *(Fall, Spring)*

ARTC 4175. Ceramics 5. (3) Prerequisites: 'C' or above in ARTC 3274 and at least one of the following: ARTA 3201, 3202, or 3203. Advanced ceramic studio of higher level skills, concepts, and aesthetics with particular emphasis on personal expression and development of an individual clay portfolio. Six contact hours. *(Fall, Spring)*

ARTC 4971. Ceramics Projects 1. (3) Prerequisites: 'C' or above in ARTC 4175 and at least one of the following: ARTA 3201, 3202, or 3203. Combination studio and seminar class. Continuation of ARTC 4175 with particular emphasis on personal expression and development of a strong individual clay portfolio. Six contact hours. *(Fall, Spring)*

ARTC 4972. Ceramics Projects 2. (3) Prerequisites: 'C' or above in ARTC 4971 and at least one of the following: ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Continuation of ARTC 4971 culminating in a body of original ceramic art in preparation for BFA Senior Exhibition. Six contact hours. *(Fall, Spring)*

Art Education (ARTE)

ARTE 1121. Introduction to Art Education. (3) Introduction to the history of art education, theories of artistic development, teaching and learning in K-12 art settings and planning lessons. A twenty-hour practicum, in which students observe art teacher behavior in schools and assist students, is a required part of the course. A grade of 'B' or better is required for admittance to art teacher licensure. Lecture. 3 contact hours. *(Fall, Spring)*

ARTE 2121. Developmental Art. (3) Human growth potential, creative and perceptual development, learning objectives, past and current philosophies, and psychology in art. Individual studio problems involving art elements, principles, and media. Six contact hours. For non-majors only. *(Fall, Spring, Summer)*

ARTE 4021. Topics in Art Education. (1-3) Special topics in art education. May be repeated for credit with change in topic. *(On demand)*

ARTE 4121. Elementary Art Methods. (3) Prerequisites: Passing scores on Praxis I and ARTE 1121. Analysis of learning themes as related to growth and development in the visual arts; organization of tools, media and materials appropriate for the elementary level; curriculum design in planning art units and lessons, evaluation and motivation techniques. Three-hour per week internship in an elementary setting is required where the student will assist the teacher, tutor students and teach a minimum of two art lessons. Lecture/Lab. Five contact hours. *(Fall/Spring)*

ARTE 4122. Secondary Art Methods. (3) (W,O) Prerequisites: Passing scores on Praxis I and ARTE 1121. Analysis of learning themes as related to growth and development in the visual arts; organization of tools, media and materials appropriate for the secondary level; curriculum design in planning art units and lessons, evaluation and motivation techniques. Three-hour per week internship in a secondary setting is required where the student will assist the teacher, tutor students and teach a minimum of two art lessons. Lecture/Lab. Five contact hours. *(Fall/Spring)*

ARTE 4467. Student Teaching in Art. (15) Prerequisites: ARTE 4122 and approved application for student teaching; senior status; completion of professional education requirements; grades of C or better in all courses required for licensure. Corequisite: enrollment only in student teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher. The student must demonstrate the competencies identified for his/her specific teaching filed in an appropriate grade level setting. *(Fall, Spring)*

Fibers (ARTF)

ARTF 2151. Fibers 1. (3) Introduction to the field of fibers, with exploration in constructed fibers, garment forms, and surface design, including weaving, dying, printing, and three dimensional construction techniques. Six contact hours. *(Fall, Spring)*

ARTF 2255. Tapestry. (3) Prerequisite: 'C' or above in ARTF 2151 and ARTB 1202 or permission of instructor. Tapestry techniques concentrating on color and design. May be repeated for credit. Six contact hours. *(On demand)*

ARTF 2256. Rug Weaving. (3) Prerequisite: 'C' or above in ARTF 2151 and ARTB 1202. Technical study including warp-faced and weft-faced rugs, pile, and flat woven surfaces. May be repeated for credit. Six contact hours. *(On demand)*

ARTF 3051. Topics in Fibers. (1-3) Special Topics in fibers. May be repeated for credit with change in topic. *(On demand)*

ARTF 3255. Mixed Media Book & Papermaking. (3) An introduction to book art forms including hand-sewn Western Codex, Japanese binding, accordion pleats, and others. Students will create a portfolio of hand made papers using abaca and other fibers, and explore three-dimensional paper forms. Six contact hours. *(Summer, Alternate years)(On demand)*

ARTF 3352. Fibers 2: Surface Design. (3) Prerequisites: 'C' or above in ARTF 2151 and ARTB 1202 or permission of instructor. Exploration of surface design techniques including batik, silkscreen, block printing and other dyeing processes combined with embellishment techniques such as embroidery and beadwork. Six contact hours. *(Spring) (Alternate years)*

ARTF 3353. Fibers 3: Loom Weaving. (3) Prerequisites: 'C' or above in ARTF 2151 and ARTB 1202 or permission of instructor. Exploration of four-harness loom weaving including plain, twill, overshot, lace and double weaves. Six contact hours. *(Fall) (Alternate years)*

ARTF 3354. Fibers 4: Non-Loom Constructions. (3) Prerequisites: 'C' or above in ARTF 2151, ARTA 3203 and ARTB 1202 or permission of instructor. Continuation of development of skills and concepts in fiber, focusing on non-loom constructions such as coiling, twining, netting and garment forms. Six contact hours. *(Spring) (Alternate years)*

ARTF 4951: Fibers Projects 1. (3) Prerequisites 'C' or above in ARTF 3352 and ARTF 3353 and ARTF 3354 and ARTA 3201 or 3202 or 3203. Advanced level fiber techniques and concepts with emphasis on personal expression and development of individual fiber portfolio. Six contact hours. *(Fall, Spring)*

ARTF 4952. Fibers Projects 2. (3) Prerequisites: 'C' or above in ARTF 4951 and ARTA 3201 or 3202 or 3203. Corequisite: ARTA 4601. Emphasis on portfolio development, professional practices specific to the fiber field and preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

Graphic Design (ARTG)

ARTG 2180: Graphic Design Methods. (3) Introduction to the discipline of graphic design. A lecture-based course with a smaller studio component. Focus on graphic design history and the process/methodology unique to the design profession. Project assignments will coincide with lecture material, and will enable students to develop the visual problem solving skills and non-computer-hand skills needed for pursuing further study in graphic design. Four contact hours. *(Fall, Spring)*

ARTG 2181. Graphic Design 1. (3) Prerequisites: 'C' or above in ARTB 1201 and ARTB 1203. Introduction to basic graphic design and visual communications principles and the history of design. Exploration of equipment, materials, techniques, and procedures. Emphasis on concept development and basic layout design skills. Six contact hours. *(Fall, Spring)*

ARTG 3081. Topics in Graphic Design. (1-3) Prerequisite: 'C' or above in ARTG 2181 and permission of instructor. Special topics in graphic design. May be repeated for credit with change in topic. *(On demand)*

ARTG 3183. Graphic Design 2. (3) Prerequisites: 'C' or above in ARTM 2105, ARTG 2180 and ARTG 2181. Intermediate level graphic design and visual communications problem-solving with an introduction to electronic pre-press and print production techniques. Assignments focus on research, concept evolution, designer/client relationships, and the function of the computer as a creative tool. Six contact hours. *(Fall, Spring)*

ARTG 3184. Typography. (3) Prerequisites: 'C' or above in ARTG 3183 and at least one of the following: ARTA 3201, 3202, or 3203. Investigation of the principles of typography including the expressive characteristics of letterforms, the relationships between image and type, and the application of type to new forms of visual media. Six contact hours. *(Fall, Spring)*

ARTG 3287. Exhibition Design. (3) Prerequisites: 'C' or above in ARTG 2181 and ARTG 3183. Theory, interpretation, design, and fabrication of exhibitions for museums, galleries, and other cultural, corporate, educational, and public use. Six contact hours. *(Spring) (Alternate years)*

ARTG 3408. Graphic Design Internship. (3) Prerequisite: 'C' or above in ARTA 3201; ARTG 3184; and permission of instructor, department, and sponsor (consents required prior to registration). Placement in a professional setting for observation and supervised design-related duties. An average of ten hours per week for twelve weeks for a total of 120 hours. Written documentation of internship required. *(Pass/No Credit) (Fall, Spring, Summer)*

ARTG 4180. Print Production. (3) Prerequisites: 'C' or above in ARTG 3183 and ARTG 3184 and at least one of the following: ARTA 3201, 3202, or 3203. Advanced level graphic design problem-solving that concentrates on the relationships between message and media, and the exploration of both digital and traditional production techniques. Topics also include project planning and scheduling, paper characteristics and selection, and the applied practice of printing as it pertains to visual communication. Six contact hours. *(Fall, Spring)*

ARTG 4181. Communications Design. (3) Prerequisites: 'C' or above in ARTG 3183 and ARTG 3184 and at least one of the following: ARTA 3201, 3202, or 3203. Advanced study of graphic design as applied to problems in corporate communications and advertising. Project assignments include corporate identity (branding), collateral design, and advertising campaigns for print media. Excellent research, process, design, and presentation skills required. Six contact hours. *(Fall, Spring)*

ARTG 4982. Graphic Design Projects. (3) Prerequisites: 'C' or above in ARTG 4180 and 4181 and at least one of the following: ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Advanced level studio course requiring independent solving of assigned design problems focusing on self promotion and issues pertaining to design and society. Project requirements also include the creation of new portfolio pieces and/or the revision of existing work. Six contact hours. *(Fall, Spring)*

Art History (ARTH)

ARTH 1211. Art History Survey I. (3) Survey of world art from prehistory to c. 1300C.E., focusing on the functions and meanings of individual works of art, visual culture, and art history as a discipline. Lecture course. *(Fall)*

ARTH 1212. Art History Survey II. (3) Survey of world art from c. 1300C.E. to the close of the second World War, focusing on the functions and meanings of individual works of art, visual culture, and art history as a discipline. Lecture course. *(Spring)*

ARTH 2001. Topics in Art History. (3) Special Topics in art history. May be repeated for credit with change in topics. Lecture course. *(On demand)*

ARTH 2110. Contemporary Art History. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of the instructor. History of primary art movements, artists, and visual culture from 1940 to the present, including theoretical and historical perspectives. *(Fall)*

ARTH 2113. Arts of Africa, the Pacific and the Americas. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of the arts of Africa, the Pacific and the Americas with special emphasis on the religious, philosophical and political aspects of art. *(On demand)*

ARTH 2140. Medieval Art. (3) Prerequisite: 'C' or above in ARTH 1211 or permission of instructor. Survey of the architecture, sculpture, stained glass, mosaics, painting, manuscript illumination, and luxury

objects of Europe between the fall of the Roman Empire until the beginning of the Renaissance, both in the Byzantine Empire and the western Middle Ages. *(On demand)*

ARTH 2190. Art of the United States. (3) Crosslisted as AMST 2050. Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of the major artists and movements in the United States from the Colonial period through 1940. *(On demand)*

ARTH 3001. Topics in Art History. (1-3) Special topics in art history. May be repeated for credit with change in topic. *(On demand)*

ARTH 3100: Field Study in Visual Art. (3) Short, intensive summer course on contemporary art issues combining a seminar (reading, research, discussion, writing, and oral presentation) with a week-long group field trip to major museums, alternative spaces, galleries, and artists' studios in New York City. *(On demand)*

ARTH 3114. Art History Methods. (3) Prerequisites: 'C' or above in ARTH 1211, 1212, and 2110, or permission of instructor. Survey of primary methodologies, theories and research in the history of art and art criticism, including formalism; iconography; connoisseurship; biography; social history; Marxism; feminism; postmodern, and contemporary theory. *(Fall)*

ARTH 3115. Honors Art History Methods. (3) Prerequisites: 'C' or above in ARTH 1211, 1212, and 2110, or permission of instructor. Survey of primary methodologies, theories and research in the history of art and art criticism, including formalism; iconography; connoisseurship; biography; social history; Marxism; feminism; postmodern, and contemporary theory. *(On demand)*

ARTH 3317. Maya Art. (3) Crosslisted as LTAM 3300. Prerequisite: 'C' or above in ARTH 1211 or permission of instructor. Survey of the cultures, artistic production and architecture of the Maya from c. 250 to 800 C.E. Readings and discussions focus on Maya rulership and social structure. *(Spring) (Alternate years)*

ARTH 3318. Mexica (Aztec) Art. (3) Crosslisted as LTAM 3301. Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of the cultures, artistic production and architecture of the Central Mexico region from c. 1300 to the period of European invasion in the 16th century. Readings and discussions focus on artistic traditions, daily life, and political structures. *(Fall)*

ARTH 3319. Andean Art. (3) Crosslisted as LTAM 3302. Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of the cultures, artistic production and architecture of the Andean region up to the period of European invasion in 1532. Readings and discussions focus on artistic traditions, cosmology, and political structures. *(Spring) (Alternate years)*

ARTH 3320. Ancient Egyptian & Near Eastern Art. (3) Prerequisite: 'C' or above in ARTH 1211 or permission of instructor. Survey of the arts and architecture of the ancient Near East, Egypt, and Aegean from 3000 - 600 BCE. Readings and discussions focus on issues of ethnicity, gender, religion, and politics. *(Fall) (Alternate years)*

ARTH 3322. Ancient Greek Art. (3) Prerequisites: 'C' or above in ARTH 1211 or permission of instructor. Survey of the arts and architecture of the ancient Greeks, Etruscans, and Persians from c. 800-31 B.C.E. Readings and discussions focus on issues of ethnicity, gender, religion, and politics. *(Fall) (Alternate years)*

ARTH 3323. Ancient Roman Art. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of the arts and architecture of the peoples included in the Roman Empire from c. 300 B.C.E. to c. 400 C.E. Readings and discussions focus on issues of ethnicity, gender, religion, and politics. *(Spring)*

ARTH 3349. Gothic Art. (3) Prerequisite: 'C' or above in ARTH 1211 or permission of instructor. Survey of the art and architecture in Western Europe from the 11th to the 15th centuries, with attention paid to book arts, panel painting, and multi-media 3D environments in France, Germany, Bohemia, Italy, and the Low Countries. *(Spring) (Alternate years)*

ARTH 3350. Northern Renaissance Art. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of Netherlandish and German painting, printmaking, and sculpture of the Renaissance. Readings and discussions focus on religion, patronage, and the used of art in society. *(Fall)*

ARTH 3351. Italian Renaissance Art. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of major artists and issues in Italian Renaissance art and architecture. Readings and discussions focus on major centers of artistic activity, patronage, and the rise of Humanism. *(On demand)*

ARTH 3360. Northern Baroque Art. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of Northern European art from the 16th and 17th centuries. Readings and discussions focus on a variety of artistic genres and art's relationship to religion and politics. *(Spring) (Alternate years)*

ARTH 3380. 19th Century Art in Europe. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of the major artists and movements in 19th century in Europe, including discussions of cultural contexts and philosophical backgrounds of major artists and styles. *(Spring) (Alternate years)*

ARTH 3390. 20th Century Art in Europe. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of the major movements in 20th century modernist art in Europe from 1900-1945, with special emphasis on the cultural and philosophical backgrounds of major artists and styles. *(Spring) (Alternate years)*

ARTH 3393. History of Photography. (3) Prerequisite: 'C' or above in ARTH 1212 or permission of instructor. Survey of the major events and stylistic developments in photography from 1839 to the present. *(Fall)*

ARTH 3394. Women in Art. (3) Crosslisted as WMST 3050. A survey of the works and words of diverse women artists from Medieval to contemporary times with special consideration of social history and art theory. This class combines lectures with discussion, tests, research, and writing. *(Spring) (Alternate Years)*

ARTH 3810. Independent Study in Art History. (1-3) Prerequisite: permission of instructor. Supervised individual investigation of art history topic with appropriate documentation of research results. May be repeated for credit. *(Fall, Spring)*

ARTH 4212. Contemporary Art Theory & Criticism. (3) Prerequisites: 'C' or above in ARTH 3110 or permission of instructor. Major ideas and writings which discuss and interpret the visual arts of the contemporary era; readings in theory and criticism from the postmodern and current periods. *(On demand)*

ARTH 4601. Problems in Pre-Columbian Art History. (3) (W) (O) Prerequisite: 'C' or above in ARTH 3317, ARTH 3318, or ARTH 3319 or permission of instructor. A seminar designed around a problem in Pre-Columbian Art History, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. *(On demand)*

ARTH 4603. Problems in Ancient Art History. (3) (W) (O) Prerequisite: 'C' or above in ARTH 3320, ARTH 3322, or ARTH 3323 or permission of instructor. A seminar designed around a problem in Ancient Art History, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. *(On demand)*

ARTH 4605. Problems in Renaissance Art History. (3) (W) (O) Prerequisite: 'C' or above in ARTH 3350, ARTH 3351, or ARTH 3360 or permission of instructor. A seminar designed around a problem in Renaissance Art History, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. *(On demand)*

ARTH 4609. Problems in Recent Art History. (3) (W) (O) Prerequisite: 'C' or above in ARTH 3390, ARTH 3393, or ARTH 3394 or permission of instructor. A seminar designed around a problem in Art History since 1900, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. *(On demand)*

ARTH 4700. Art History Honors Thesis. (3) Prerequisites: 'C' or above in ARTH 3115 and permission of instructor. The preparation and presentation of an acceptable Honors thesis or its equivalent. The final course in a required three-course sequence for Honors in Art History. Completion of a thesis earning a grade "C" or better meets the requirement for a 4000 level course in the major; a grade "A" is required to earn honors. *(On demand)*

Illustration (ARTL)

ARTL 2186. Illustration I. (3) Prerequisites: 'C' or above in ARTB 1201 and completed or concurrent ARTB 1205. Survey of the history of illustration and problems in a wide range of media with emphasis on the significant precedents and individuals responsible for shaping the field. Studio projects, demonstrations, and critiques contribute to visual literacy. Six contact hours. *(Fall, Spring)*

ARTL 3086. Topics in Illustration. (1-3) Special topics in illustration. May be repeated for credit with change in topic. *(On demand)*

ARTL 3186. Illustration: Media/Method. (3) Prerequisites: 'C' or above in ARTL 2186, corequisite or completed ARTD 3134 and ARTD 2139 (Illustration concentrates); ARTL 2186 only (Graphic Design concentrates). Tools and techniques of illustration including preliminary sketching, photography, library, and Internet research. *(Fall)*

ARTL 3187. Children's Book Illustration. (3) Prerequisites: 'C' or above in ARTA 3201 and ARTL 2186. Survey of layout, research, storyboard, dummy, and finished artwork necessary to create a children's book for presentation to publishers. Come prepared with an idea for a children's book. Six contact hours. *(Fall) (Alternate years)*

ARTL 3188. The Figure in Illustration. (3) Prerequisites: 'C' or above in ARTD 2139 and ARTD 3134 and ARTL 2186 and at least one of the following: ARTA 3201, 3202, or 3203. Examination of memory and research techniques to draw the figure in any position or environment. Emphasis on anatomy, form, composition, and costume. Six contact hours. *(Fall) (Alternate years)*

ARTL 3286. Illustration Sequence/Story. (3) Prerequisites: 'C' or above in ARTD 3134 and ARTL 2186 and at least one of the following: ARTA 3201, 3202, or 3203. Corequisites: Students who are working in the Illustration Concentration must be taking or have taken ARTD 2139. Students who are working in the Graphics Design Concentration must be taking or have taken ARTL 2186. Relationship between words and pictures. Development of a narrative pictorial approach in problems for a wide variety of markets. Single and sequential images as visual solutions. Six contact hours. *(Spring)*

ARTL 4981. Illustration Projects. (3) Prerequisites: 'C' or above in ARTL 3186 and ARTL 3286 and at least one of the following: ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Initiation and implementation of a self-designed advanced level project solving a complex artistic problem. Research in self promotion, professional practice and portfolio refinement required. Six contact hours. *(Spring)*

Multi-Media (ARTM)

ARTM 2105. Electronic Media. (3) Prerequisites: 'C' or above in ARTB 1201 and 1203, or permission of instructor. Methods of digital and electronic production within a fine arts context, Macintosh hardware and software, an historical overview of electronic artists and artworks, and the Internet as a publishing and research tool. Six contact hours. *(Fall, Spring)*

ARTM 3005. Topics in Multi-media. (1-3) Special Topics in multi-media. May be repeated for credit with change in topic. *(On demand)*

ARTM 3103. Animation and Interactivity. (3) Prerequisites: 'C' or above in ARTM 2105 or permission of instructor. Emphasis on the tools, techniques, and software used in the creation of interactive multimedia and animation, especially media creation for the Internet and CD-ROM. *(Fall, Spring)*

ARTM 3105. Video Art. (3) Prerequisite: 'C' or above in ARTM 2105. Video as an art form, including basic techniques of video production and editing, image processing techniques, integration between video and the computer, aesthetic and performance strategies for working in a time-based medium, and survey of the history of video art. Six contact hours. *(Spring)*

ARTM 3405. Internship in Electronic Media. (3) Prerequisites: 'C' or above in ARTM 3105 or ARTT 3205; and permission of instructor, department, and sponsor (consents required prior to registration). Non-salaried opportunity for students to observe, examine, and participate in the creative dynamics and procedural operations of an art organization, production house or other arts related business or expert craftsman dealing with electronic media. Sponsor and faculty supervised. Average of eight hours per week for fifteen weeks for a total of 120 hours. *(Pass/No Credit) (On demand)*

Painting (ARTP)

ARTP 2131. Painting 1. (3) Prerequisite: 'C' or above in ARTB 1201 and 1203 or permission of instructor. Beginning studio exploring basic theory and technique of painting using oil paints. Six contact hours. *(Fall, Spring)*

ARTP 3031. Topics in Painting. (1-3) Special topics in painting. May be repeated for credit with change in topic. *(On demand)*

ARTP 3131. Abstract Painting. (3) Prerequisite: 'C' or above in ARTP 2131 or permission of instructor. Intermediate studio exploring varieties of abstraction in modern and post-modern painting practice, using acrylic and oil paints, collage, and mixed media. Six contact hours. *(Fall)*

ARTP 3132. Figure in Painting. (3) Prerequisites: 'C' or above in ARTP 2131 and completed or corequisite ARTB 1205 or permission of instructor. Intermediate studio exploring the human form as a vehicle for artistic expression using oil and acrylic paints and mixed media. Six contact hours. *(Spring)*

ARTP 4931. Painting Projects 1. (3) Prerequisites: 'C' or above in ARTP 3131, 3132, and one of the following: ARTA 3201, 3202, or 3203. Advanced studio exploring individual directions in painting and preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

ARTP 4932. Painting Projects 2. (3) Prerequisite: 'C' or above in ARTR 3161 and ARTP 4931 or permission of instructor. Advanced studio continuing exploration of individual directions in painting and preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

ARTP 4933: Painting Projects 3. (3) Prerequisites: 'C' or above in ARTP 4932 and one of the following: ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Advanced Studio continuing exploration of individual direction(s) in painting and preparation for Senior Exhibition. Six contact hours. May be repeated for credit without exhibition. *(Fall, Spring)*

Printmaking and Drawing (ARTD and ARTR)

ARTD 2139: Drawing 2. (3) Prerequisites: 'C' or above in ARTB 1201 and ARTB 1203, or permission of instructor. Further development of perceptual skills with emphasis on conceptual issues; exploration of subject matter, meaning and content, and thematic development in a variety of black and white and color materials. Six contact hours. *(Spring)*

ARTD 3134. Figure & Anatomy. (3) Prerequisite: 'C' or above in ARTB 1201 and ARTB 1205 or permission of instructor. Emphasizes the study of anatomy as it pertains to drawing. Complex drawing problems in a variety of media. Six contact hours. *(Fall, Spring)*

ARTD 3135. Expressive Drawing. (3) Prerequisites: 'C' or above in ARTB 1205 and *either* ARTD 2139 or ARTR 2161 or permission of instructor. Intermediate studio exploring experimental, expressive, and conceptual approaches to drawing. Includes figurative and non-figurative representation as well as abstraction. Emphasis on personal imagination and personal imagery. Six contact hours. *(Spring)*

ARTR 2161. Lithography & Etching 1. (3) Prerequisites: 'C' or above in ARTB 1201 and 1203 or permission of instructor. Beginning printmaking studio. Introduction to lithographic techniques of drawing and hand printing from stones and digital plates. Introduction to intaglio techniques of etching, aquatint and drypoint. Emphasis on personal imagery along with the expressive potential of the media. Particularly suited to developing drawing skills. Six contact hours. *(Fall)*

ARTR 2162. Silkscreen & Woodcut 1. (3) Prerequisites: 'C' or above in ARTB 1201 and 1203 or permission of instructor. Beginning printmaking studio. Introduction to silkscreen techniques of photoemulsion, digital stencils, cut stencils, and screen filler stencils. Introduction to relief techniques of woodcut, linocut,

and inkless embossing. Emphasis on personal imagery along with the expressive potential of the media. Six contact hours. *(Spring)*

ARTR 3061. Topics in Printmaking and Drawing. (1-3) Special topics in printmaking and/or drawing. May be repeated for credit with change in topic. *(On demand)*

ARTR 3161: Mixed Media: Works on Paper. (3) Prerequisite: 'C' or above in either ARTR 2161, ARTR 2162, ARTD 2139, ARTP 2131 or permission of instructor. Intermediate studio exploring conceptual problems using color drawing media, painting, collage, and low-tech printmaking techniques. Emphasis on personal imagery along with the expressive potential of combined media. Six contact hours. *(Fall)*

ARTR 3162. Color Layers in Printmaking & Drawing. (3) Prerequisite: 'C' or above in either ARTR 2161, ARTR 2162, or ARTR 3161 or permission of instructor. Intermediate studio with a focus on greater exploration of color and color layering in printmaking and drawing. Further exploration of experimental and expressive image-making techniques and concepts in any or combined media of printmaking and/or drawing. Six contact hours. *(Fall, Spring)*

ARTR 3263. Advanced Printmaking & Drawing. (3) Prerequisites: 'C' or above in ARTA 3202, ARTR 3161, and ARTR 3162 or permission of instructor. Advanced studio with an emphasis on personal artistic themes. Continued exploration and development of expressive image-making concepts and techniques in any media of printmaking and/or drawing. Six contact hours. *(Fall, Spring)*

ARTR 4961: Printmaking and Drawing Projects 1. (3) Prerequisites: 'C' or above in ARTR 3263 and ARTA 3202, or permission of instructor. Studio exploring individual direction(s) in any media of printmaking and/or drawing and preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

ARTR 4962. Printmaking & Drawing Projects 2. (3) Prerequisite: 'C' or above in ARTR 4961. Studio exploring individual direction(s) in any or combined media of printmaking and/or drawing and preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

ARTR 4963: Printmaking & Drawing Projects 3. (3) Prerequisite: 'C' or above in ARTR 4962; corequisite: ARTA 4601. Studio exploring individual direction(s) in any or combined media of printmaking and/or drawing and preparation for Senior Exhibition. Six contact hours. May be repeated for credit without the exhibition. *(Fall, Spring)*

Time Arts/Photography (ARTT)

ARTT 2191. Photographic Media I. (3) Fundamental principles, processes, and aesthetics of black and white photography. Introduction to photographic theory, operation of cameras, and basic darkroom techniques. Principles of photography as a means of personal expression. Six contact hours. *(Fall, Spring, Summer)*

ARTT 3091. Topics in Time Arts. (1-3) Prerequisite: Permission of instructor. Special topics in time arts. May be repeated for credit with change in topic. *(On demand)*

ARTT 3190. Digital Photography. (3) Prerequisite: 'C' or above in ARTT 2191 and ARTM 2105. Exploration of the technical and aesthetic parameters unique to digital photography. Forms of input and output will be discussed along with advanced applications of Adobe Photoshop. Six contact hours. *(On demand)*

ARTT 3191. Camera & Light. (3) Prerequisites: 'C' or above in ARTB 1201 and ARTT 2191. Principles and practices of small, medium or large format photography, in conjunction with available and studio lighting techniques. Emphasis on personal expression. Six contact hours. *(On demand)*

ARTT 3193. Alternative Photographic Media. (3) Prerequisite: 'C' or above in ARTT 3391. Alternative silver and non-silver photographic media and aesthetics. Experimental studies in the personal and imaginative use of photographic materials. Six contact hours. *(On demand)*

ARTT 3195. Time Arts As Documents. (3) Prerequisite: 'C' or above in ARTT 2191 or permission of instructor. Examines the nature of time arts documents, considering their sociological, anthropological, and artistic qualities. Students are required to study the history and criticism of documentation and to make a document incorporating historical information and contemporary concerns. Six contact hours. *(On demand)*

ARTT 3205. Applied Electronic Media. (3) Prerequisites: 'C' or above in ARTM 2105 and ARTA 3201 or 3202 or permission of the instructor. Advanced work in video art, interactive design, and electronic installation art. Six contact hours. *(Fall)*

ARTT 3391. Black & White Printing . (3) Prerequisites: 'C' or above in ARTB 1201 and ARTT 2191. Continuation of ARTT 2191 with emphasis on contemporary methods, approaches and techniques in silver printing used as a means of creative personal expression. Six contact hours. *(Fall, Spring)*

ARTT 3392. Color Photography 1. (3) Prerequisite: 'C' or above in ARTB 1201 and ARTT 2191. Continuation of ARTT 2191 with emphasis on color negative printing and theory and processes used as a means of creative personal expression. Six contact hours. *(On demand)*

ARTT 4191. Medium & Large Format Camera. (1-3) Prerequisites: 'C' or above in ARTT 2191, 3191, 3391, or permission of the instructor. Continuing advanced photographic studies exploring creative imaging using medium and large camera formats. Studies may be executed under daylight or studio conditions. Image output is either film and/or digital. Six contact hours. *(On demand)*

ARTT 4291. Advanced Time Arts Media. (3) Prerequisite: 'C' or above in ARTT 3191 or permission of instructor. Advanced use of Time Arts media for individual creative expression. May be repeated for credit. Six contact hours. *(On demand)*

ARTT 4409. Internship in Time Arts. (3) Prerequisites: 'C' or above in ARTT 3191, ARTT 4291, ARTA 3202, and permission of instructor, department, and sponsor (consents required prior to registration). Non-salaried opportunity for students to observe, examine, and participate in the creative dynamics and procedural operations of photography and e-media art organizations, photographically and e-media related businesses, or museum studies. Sponsor and faculty supervised. An average of eight hours per week for fifteen weeks for a total of 120 hours. *(Pass/No Credit) (Fall, Spring, Summer)*

ARTT 4991. Time Arts Projects 1. (3) Prerequisites: 'C' or above in ARTT 3191 and ARTT 3391 and ARTT 4291 and ARTA 3201 or 3202 or 3203. Photographic, video and photo-electronic media studio focused on producing a body of work related to an artistic problem or theme chosen and explored as visual research by the student. Six contact hours. *(Fall, Spring)*

ARTT 4992. Time Arts Projects 2. (3) Prerequisite: 'C' or above in ARTT 4991; Corequisite: ARTA 4601. Continuation of ARTT 4991 and completion of a body of original art work. Six contact hours. *(Fall, Spring)*

Sculpture (ARTZ)

ARTZ 2104. Installation Art. (3) Prerequisites: 'C' or above in ARTB 1201 and 1202. Techniques and methods of creating Installation Art, from the generation of initial ideas, to experimentation, mockups, and final assembly. Emphasis on the historical and creative issues surrounding the nature and definition of installation art. May be repeated one time for credit. *(On demand)*

ARTZ 2141. Sculpture 1: Construction. (3) Prerequisites: 'C' or above in ARTB 1202 and 1203 or permission of instructor. Beginning studio exploring three-dimensional forms, concepts, and basic construction techniques utilizing wood as the primary media. Six contact hours. *(Fall, Spring)*

ARTZ 2146. Metalsmithing/Jewelry I. (3) Prerequisite: 'C' or above in ARTB 1202 or permission of instructor. Beginning studio exploring three-dimensional forms, concepts and techniques utilizing non-ferrous metals in functional design. Six contact hours. *(Fall, Spring or On demand)*

ARTZ 3041. Topics in Sculpture. (1-3) Prerequisite: 'C' or above in ARTB 1202. Special Topics in sculpture. May be repeated for credit with change in topic. *(On demand)*

ARTZ 3046. Topics in Metalsmithing/Jewelry. (1-3) Prerequisite: 'C' or above in ARTZ 2146. Special topics in metalsmithing. May be repeated for credit with change in topic. *(Fall, Spring)*

ARTZ 3142. Sculpture 2: Casting & Fabrication. (3) Prerequisites: 'C' or above in ARTZ 2141 or permission of instructor. Intermediate studio continuing exploration of three-dimensional forms and concepts while introducing metal casting, more advanced wood-forming processes, and basic metal-fabrication techniques. Six contact hours. *(Fall, Spring)*

ARTZ 3243. Sculpture 3: Additive/Subtractive/ Assemblage. (3) Prerequisites: 'C' or above in ARTC 2171 or ARTC 2172 and ARTZ 3142 or permission of instructor. Advanced studio continuing exploration of three-dimensional forms and concepts while introducing additive/subtractive processes utilizing clay and plaster, and advanced metal-fabrication techniques. Six contact hours. *(Fall, Spring)*

ARTZ 3344. Sculpture 4: Public Sculpture. (3) Prerequisites: 'C' or above in ARTZ 3243 and at least one of the following: ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Studio continuing exploration of three-dimensional forms and concepts while introducing techniques and issues related to designing, constructing and installing large scale public sculpture. Six contact hours. *(Fall, Spring)*

ARTZ 4941. Sculpture Projects 1. (3) Prerequisites: 'C' or above in ARTZ 3344 and at least one of the following: ARTA 3201, 3202, or 3203. Studio continuing exploration of individual direction(s) in sculpture in preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

ARTZ 4942. Sculpture Projects 2. (3) Prerequisites: 'C' or above in ARTZ 4941 or permission of instructor. Studio continuing exploration of individual direction(s) in sculpture in preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

ARTZ 4943. Sculpture Projects 3. (3) Prerequisites: 'C' or above in ARTZ 4942 and at least one of the following: ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Studio continuing exploration of individual direction(s) in sculpture in preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

ATHLETIC TRAINING (ATRN)

ATRN 2150. Introduction to Kinesiology. (3) Crosslisted as EXER 2150. Introduction to the study of health fitness relative to philosophies, practices, work settings, trends, knowledge bases, skills and licensures. *(Spring, Summer)*

ATRN 2290. First Aid: Responding to Emergencies. (3). Crosslisted as EXER 2290. The knowledge and skills associated with being a first responder in case of injury or sudden illness. Qualifying students may receive certifications in: Responding to Emergencies-First Aid, Community CPR, Preventing Disease Transmission

(Bloodborne Pathogens Training) and Automated External Defibrillator (AED). *(Fall, Spring, Summer)*

ATRN 2294. Care and Prevention of Athletic Injuries. (3) Crosslisted as EXER 2294. Prerequisite or corequisite: EXER 2290 or ATRN 2290. Focus on the health care competencies necessary for the prevention, emergency management and acute care of athletic-related injuries. Also provides an introduction to the role of the Certified Athletic Trainer in providing health to the physically active individual. *(Spring)*

ATRN 2295. Care and Prevention of Athletic Injuries Laboratory. (1) Crosslisted as EXER 2295. Corequisite: ATRN 2294. Focus on the psychomotor competencies and clinical proficiencies necessary for the prevention, emergency management and acute care of athletic-related injuries. *(Spring)*

ATRN 2298. Applied Kinesiology. (3) Crosslisted as EXER 2298. Prerequisites: BIOL 1273, BIOL 1273L, and PKNS major. The study of musculoskeletal anatomy and how it related to normal function of the human body. *(Spring)*

ATRN 3099. Movement Problems/Topics. (1-6) Prerequisite: permission of instructor. Movement problems/topics chosen by the student which relate to special areas of interest. May be repeated for credit with approval of instructor. *(Fall, Spring, Summer)*

ATRN 3260. Nutrition for the Physically Active. (3) Crosslisted as EXER 3260. Prerequisite: EXER or ATRN major. Corequisite: ATRN 3280. Introduction to principles and concepts of nutrition and how dietary practices affect health and disease. *(Fall)*

ATRN 3280. Foundations of Exercise Physiology. (3) Crosslisted as EXER 3280. Prerequisite: EXER or ATRN majors. Physiological foundations of programming exercise for health fitness with emphasis on acute physiological responses to bouts of exercise and chronic physiological responses and adaptations to repeated exercise and programs of exercise. *(Fall)*

ATRN 3281. Exercise Physiology Laboratory. (1) (W) Crosslisted as EXER 3281. Corequisite: EXER 3280 or ATRN 3280. Laboratory experiences and assignments to enhance the lecture material presented in ATRN 3280. One laboratory period of two hours a week or two one hour labs. *(Fall)*

ATRN 3286. Exercise Testing. (3) Crosslisted as EXER 3286. Prerequisite: Successful completion of EXER 3280 or ATRN 3280 and EXER 3281 or ATRN 3281. Corequisite: ATRN 3287. This course is designed to teach methods and protocols for collecting and interpreting information collected on individuals concerning various fitness parameters for the future development of individual and group conditioning programs. *(Spring)*

ATRN 3287. Exercise Testing Lab. (1) (W) Crosslisted as EXER 3287. Corequisite: EXER 3286 or ATRN 3286. Practitioner lab in the use of appropriate data collection methods and protocols. *(Spring)*

ATRN 3288. Upper Body Injury Evaluation. (3) Prerequisite: Acceptance into the Athletic Training Education Program. An upper division athletic training course focusing on orthopedic evaluation competencies for assessing athletic-related injuries and pathology to the upper extremities, cervical and thoracic spine. *(Fall)*

ATRN 3289. Upper Body Injury Evaluation Laboratory. (1) Corequisite: ATRN 3288. Practitioner lab focusing on the psychomotor competencies and clinical proficiencies related to upper extremity, cervical and thoracic spine injury and pathology assessment. *(Fall)*

ATRN 3290. Lower Body Injury Evaluation. (3) Prerequisites: Acceptance into the Athletic Training Education Program. An upper division athletic training course focusing on orthopedic evaluation competencies for assessing athletic-related injuries and pathology to the lower extremities and lumbar spine. *(Fall)*

ATRN 3291. Therapeutic Modalities. (3) Prerequisite: Acceptance into the Athletic Training Education Program. A study of the theories and techniques of therapeutic modalities within the scope of athletic training. *(Spring)*

ATRN 3292. Therapeutic Modalities Laboratory. (1) Corequisite: ATRN 3291. Practitioner lab focusing on the psychomotor competencies and clinical proficiencies related to the use of therapeutic modalities within the scope of athletic training. *(Spring)*

ATRN 3293. General Medical and Psychosocial Aspects of Athletic Training. (3) Prerequisites: ATRN 3288, ATRN 3289, 3290 and ATRN 3295.. Study of cognitive, psychomotor, and affective competencies and proficiencies that the entry-level certified athletic trainer must possess to recognize, treat, and refer, when appropriate, the general medical conditions, psychosocial situations, and disabilities of athletes and others involved in physical activity. *(Spring)*

ATRN 3295. Lower Body Injury Evaluation Laboratory. (1) Corequisite: ATRN 3290. Practitioner lab focusing on the psychomotor competencies and clinical proficiencies related to lower extremity and lumbar spine injury evaluations. *(Fall)*

ATRN 3400. Athletic Training Clinical I. (2) Prerequisites: Acceptance into the Athletic Training Education Program. Acquisition and application of clinical proficiencies and psychomotor competencies necessary for the entry-level athletic trainer. Students must complete approximately 20 hours of clinical experience per week at an approved athletic training clinical agency. *(Fall)*

ATRN 3401. Athletic Training Clinical II. (2) Prerequisite: ATRN 3400. Continuation of ATRN 3400. Students must complete approximately 20 hours of clinical experience per week at an approved athletic training clinical agency. *(Spring)*

ATRN 4121. Pharmacology for the Physically Active. (3) Crosslisted as EXER 4121. Prerequisite: EXER 3260 or ATRN 3260. The course entails an examination of the historical aspects of use, abuse, and addiction within the realm of healthcare and human performance. This course will expose students to a wide variety of drug issues and the unique use and abuse patterns of individuals treated in healthcare settings and physical fitness. *(Fall)*

ATRN 4132. Lifetime Weight Management. (3) Prerequisites or corequisites: EXER 3260 or ATRN 3260. Examines factors in obesity and weight control, emphasizing techniques in behavior modification and lifestyle change for effective weight management. *(Spring)*

ATRN 4286. Exercise Prescription. (3) Crosslisted as EXER 4286. Prerequisite Successful completion of EXER 3286 or ATRN 3286 and EXER 3287 or ATRN 3287. This course is designed to teach the interpretation and prescription of exercise and various fitness parameters for programs with healthy populations and general clinical populations. *(Fall)*

ATRN 4290. Therapeutic Exercise. (3) Prerequisites: ATRN 3291 and ATRN 3292 . Study of the theories and techniques of therapeutic exercise within the scope of athletic training. *(Fall)*

ATRN 4291. Therapeutic Exercise Laboratory. (1) Corequisite: ATRN 4290. Practitioner lab focusing on the psychomotor competencies and clinical proficiencies related to the use of therapeutic exercise within the scope of athletic training. *(Fall)*

ATRN 4292. Organization and Administration of Athletic Training. (3) (O) (W) Prerequisites: ATRN 4290, ATRN 4291. Athletic training organization and administration. *(Spring)*

ATRN 4293. Biomechanics. (3) Crosslisted as EXER 4293. Prerequisites: EXER 3280 or ATRN 3280. Corequisite: ATRN 4294. Mechanical and anatomical kinesiology as it relates to human movement with emphasis on anatomical structures, mechanics, sport skill analysis, and related injuries. Requires preparation and presentation of a paper on a biomechanical analysis of a sport movement, exercise or injury. *(Fall)*

ATRN 4294. Biomechanics Lab. (1) (W) Crosslisted as EXER 4294. Corequisite: ATRN 4293. Laboratory experiences and assignments to enhance the lecture material presented in ATRN 4293 . One laboratory period of two hours a week or two one hour labs. *(Fall)*

ATRN 4400. Athletic Training Clinical III. (2) Prerequisite: ATRN 3401. Acquisition and application of advanced clinical proficiencies and psychomotor competencies necessary for the entry-level athletic trainer. Students must complete approximately 20 hours of clinical experience per week at an approved athletic training clinical agency. *(Fall)*

ATRN 4401. Athletic Training Clinical IV. (2) Prerequisite: ATRN 4400. Continuation of ATRN 4400. Students must complete approximately 20 hours of clinical experience per week at an approved athletic training clinical agency. *(Spring)*

ATRN 4660. Practitioner Seminar. (3) (W) (O) Prerequisites: Must be taken during the term closest to internship ATRN 4401). Emphasis is on state of the art health enhancement practices. *(Spring)*

BIOLOGY (BIOL)

BIOL 1000. Special Topics in Biology. (1-4) Prerequisites: vary with course. Special topics for non-majors in Biology. May be repeated for credit as topics vary. Lecture hours and laboratory hours vary by courses taught. *(On demand)*

BIOL 1110. Principles of Biology I. (3) BIOL 1110L. Introduction to biology for non-majors. Fundamental principles of life with a human emphasis. Not accepted toward the major in Biology. *(Fall, Spring, Summer)*

BIOL 1110L. Principles of Biology I Laboratory. (1) Prerequisite or corequisite: BIOL 1110. One laboratory period of three hours a week. Not accepted toward the major in Biology. *(Fall, Spring, Summer)*

BIOL 1115. Principles of Biology II. (3) Prerequisite: BIOL 1110 or permission of instructor. Continuation of BIOL 1110 for non-majors. Fundamental principles of life with a human emphasis. *(Fall, Spring, Summer)*

BIOL 1259. Bacteriology. (3) Prerequisite: one semester of chemistry. Basic physiology of bacteria, fungi, protozoa, and viruses, with emphasis on host-parasite interaction and control and epidemiology of infectious diseases. Not accepted toward the major in Biology. *(Fall, Spring, Summer)*

BIOL 1259L. Bacteriology Laboratory. (1) Prerequisite or corequisite: BIOL 1259. One laboratory period of three hours a week. Not accepted toward the major in Biology. Attendance mandatory for safety training. *(Fall, Spring, Summer)*

Students who plan to attend professional schools that require Human Anatomy and Physiology, BIOL 1273/1273L & BIOL 1274/1274L, for admission may submit an Academic Petition that these two courses & two labs substitute for the Physiology Area requirement. This permission will only be granted if the grades in all four courses are B or better.

BIOL 1273. Human Anatomy and Physiology. (3) Prerequisites: CHEM 1203, 1204. Fundamentals of the anatomy and physiology of the human body. Not accepted toward the major in Biology. *(Fall, Summer)*

BIOL 1273L. Human Anatomy and Physiology Laboratory. (1) Prerequisite or corequisite: BIOL 1273.

One laboratory period of three hours a week. Not accepted toward the major in Biology. *(Fall, Summer)*

BIOL 1274. Human Anatomy and Physiology II. (3) Prerequisite: A grade of C or better in BIOL 1273. Continuation of BIOL 1273. Not accepted toward the major in Biology. Students cannot receive credit for both BIOL 1274 and BIOL 3273. *(Spring, Summer)*

BIOL 1274L. Human Anatomy and Physiology Laboratory II. (1) Prerequisite or corequisite: BIOL 1274. One laboratory period of three hours a week. Not accepted toward the major in Biology. *(Spring, Summer)*

BIOL 2000. Special Topics in Biology. (1-4) Prerequisites: vary with course. Special introductory topics for biology majors. May be repeated for credit as topics vary. Lecture hours and laboratory hours will vary with the courses taught. *(On demand)*

BIOL 2120. General Biology I. (3) Prerequisite: none. Corequisite: BIOL 2120L. Origin and early evolution of life, basic principles of chemistry, cell biology, and development. Three lecture periods per week. *(Fall, Spring, Summer)*

BIOL 2120L. General Biology I Laboratory. (1) Prerequisite and/or corequisite: BIOL 2120. Experimental lab covering osmosis, enzyme activity, photosynthesis, cell division, inheritance. One three-hour laboratory period per week. *(Fall, Summer)*

BIOL 2130. General Biology II. (3) Prerequisite: BIOL 2120 and BIOL 2120L; corequisite: BIOL 2130L. Ecology, evolution, biodiversity, plant and animal structure and function. Three lecture periods per week. *(Fall, Spring, Summer)*

BIOL 2130L. General Biology II Laboratory. (1) Prerequisite and/or corequisite: BIOL 2120, and BIOL 2120L; corequisite/prerequisite: BIOL 2130. Population ecology, evolution, phylogenetics, invertebrate biology, animal and plant physiology. One three-hour laboratory period per week. *(Spring, Summer)*

BIOL 3000. Special Topics in Biology. (1-4) Prerequisite: vary with course. Special topics for intermediate level majors in Biology. May be repeated for credit as topics vary. Lecture hours and laboratory hours will vary with the courses taught. *(On demand)*

BIOL 3111. Cell Biology. (3) Prerequisite: BIOL 2130 + lab. Prerequisite or corequisite: CHEM 2131 + lab. Structure and function of cells. Biomolecular structures and their interactions including membranes, proteins and nucleic acids. *(Fall, Spring)*

BIOL 3111. Cell Biology. (3) Prerequisite: BIOL 2130 + lab. Prerequisite or corequisite: CHEM 2130 or 2131. Structure and function of cells. Biomolecular structures and their interactions including membranes, proteins and nucleic acids. *(Fall, Spring)*

BIOL 3111L. Cell Biology Laboratory. (1) (W) Prerequisite or corequisite: BIOL 3111. One laboratory period of three hours a week. *(Fall, Spring)*

BIOL 3144. Ecology. (3) Prerequisite: BIOL 2130; prerequisite or corequisite: CHEM 2130 or 2131. Interrelationships of organisms and their environment. *(Fall, Spring)*

BIOL 3144L. Ecology Laboratory. (1) (W) Prerequisite or corequisite: BIOL 3144. One laboratory period of three hours a week. *(Fall, Spring)*

BIOL 3161. Introduction to Biotechnology. (3) An overview of basic molecular biology, techniques, and uses of biotechnology tools in environmental and biomedical fields. Three lecture hours per week. *(Spring)*

BIOL 3166. Genetics. (3) Prerequisite: BIOL 2130; prerequisite or corequisite: CHEM 2130 or 2131. Basic concepts of heredity; principles of classical, molecular, and population genetics. *(Fall, Spring, Summer)*

BIOL 3166L. Genetics Laboratory. (1) (W) Prerequisite or corequisite: BIOL 3166. One laboratory period of three hours a week. *(Fall, Spring)*

BIOL 3202. Horticulture. (3) (W) Prerequisite: BIOL 2130. Principles of horticulture, greenhouse management, environmental factors, production, and maintenance of cultivars, and landscaping. *(Fall)*

BIOL 3202L. Horticulture Laboratory. (1) Prerequisite or corequisite: BIOL 3202. Greenhouse work, plant identification, and field trips. One laboratory period of three hours a week. *(Fall)*

BIOL 3215. Economic Botany. (3) (W) Prerequisite: BIOL 2130. Origins of agricultural plants; history of use and misuse of plants by humans; consideration of major groups of crop, spice, medicinal, and drug plants. *(Spring)*

BIOL 3222. General Botany. (3) Prerequisite: BIOL 2130. Morphology, physiology, reproduction, phylogeny, and ecology of plants. Students may not receive credit for both BIOL 1222 and BIOL 3222. *(On demand)*

BIOL 3222L. General Botany Laboratory. (1) Corequisite or prerequisite: BIOL 3222. One laboratory period of three hours a week. Students may not receive credit for both BIOL 1222L and BIOL 3222L. *(On demand)*

BIOL 3229. Field Botany. (3) Prerequisite: BIOL 2130 and permission of Department. A field course stressing identification, classification and habitat of the vascular plants, particularly of the Piedmont, but also including the Coastal Plain and the mountains of North Carolina. Six hours a day for 10 days. *(Summer)*

BIOL 3231. Invertebrate Zoology. (4) Prerequisite: BIOL 2130. Taxonomy, anatomy, physiology, and life histories of selected invertebrates. Three lecture hours

and one laboratory period of three hours a week. *(On demand)*

BIOL 3233. Vertebrate Zoology. (4) Prerequisite: BIOL 2130. Taxonomy, anatomy, physiology, and life histories of vertebrates. Three lecture hours and one laboratory period of three hours a week. *(Fall)*

BIOL 3234. Field Entomology. (3) Prerequisite: BIOL 2130 or permission of Department. A field course stressing identification and ecology of insects of the Piedmont of North Carolina. Six hours a day for 10 days. *(Summer)*

BIOL 3235. The Biology of Insects. (3) Prerequisite: BIOL 2130. or permission of Department. The anatomy, physiology, development, behavior, ecology, and medical and economic importance of insects. *(On demand)*

BIOL 3236. General Zoology. (3) Prerequisites: BIOL 2130. The morphology, function, development, phylogeny, and ecology of the principal invertebrate and vertebrate types. Credit cannot be received for both BIOL 1233 and BIOL 3236. *(On demand)*

BIOL 3236L. General Zoology Laboratory. (1) Prerequisite or corequisite: BIOL 3236. One laboratory period of three hours a week. Credit cannot be received for both BIOL 1233L and BIOL 3236L. *(On demand)*

BIOL 3271. Cellular Neuroscience. (3) Prerequisite: BIOL 2130 (Biology majors), PSYC 3113 (Psychology majors) or permission of Department. Physiology and biophysics of neurons synapses and principles of neural development and neural plasticity. *(Fall)*

BIOL 3271L. Neuroscience Laboratory. (1) Prerequisite or corequisite: BIOL 3271. Principles of excitability and synaptic function; neuroanatomy; neural system functions, and behavior investigated non-invasive experimentation with humans and animals. *(Fall)*

BIOL 3272. Plant Physiology. (3) Prerequisite: BIOL 2130; prerequisite or corequisite: CHEM **2130 or** 2131. Metabolic and physiological processes of plants and conditions which affect or regulate these processes. *(On demand)*

BIOL 3272L. Plant Physiology Laboratory. (1) Prerequisite or corequisite: BIOL 3272. One laboratory period of three hours a week. *(On demand)*

BIOL 3273. Animal Physiology. (3) Prerequisite: BIOL 2130, BIOL 3111; prerequisite or corequisite: CHEM 2130 or 2131. Fundamental control mechanisms that operate to maintain the homeostatic state. *(Fall, Spring)*

BIOL 3273L. Animal Physiology Laboratory. (1) (W) Prerequisite or corequisite: BIOL 3273. One laboratory period of three hours a week. *(Fall, Spring)*

BIOL 3274. Systems Neuroscience. (3) Prerequisite: BIOL 2130 (Biology majors), PSYC 3113 (Psychology majors) or equivalent. Review of neuron excitability and synaptic function; physiology of the main functional systems: sensory, motor, homeostatic/affective, and gnostic; system-level origins of learning, memory, and consciousness. *(Spring)*

BIOL 3405. Internship in Community Education and Service. (1-3) Prerequisites: junior standing, acceptance into program and approval of department. A project-oriented, service-learning internship with a community organization. Maximum credit toward major is two hours for B.A. and three hours for B.S. May be repeated for credit. *(Fall, Spring, Summer)*

BIOL 3500. Biology Cooperative Education and 49ership Experience. (0) Prerequisite: approval by the Department and the University Career Center. Required of students participating in the 49ership or Cooperative Education Program during the semesters in which they are working. Participating students pay a course registration fee for transcript notation (49ership and coop) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. *(Fall, Spring)*

BIOL 3800. Tutorial in Biology. (1-4) Prerequisite: Permission of Department. Enables junior and senior biology majors to engage in directed study in their fields of interest. Maximum credit toward major: one hour for B.A.; two hours for B.S. May be repeated for credit. *(Fall, Spring, Summer)*

BIOL 3900. Undergraduate Research. (1-4) Prerequisite: Permission of the department. Enables junior and senior biology majors to initiate research projects in their respective fields of interest. Maximum credit toward major: two hours for B.A.; three hours for B.S. May be repeated for credit as topics vary. May substitute for only one lab. *(Fall, Spring, Summer)*

BIOL 4000. Special Topics in Biology. (1-4) Prerequisites and credit hours vary with topics. Special topics for advanced undergraduates. May be repeated for credit as topics vary. Lecture hours and laboratory hours will vary with the courses taught. *(Fall, Spring)*

BIOL 4111. Evolution. (3) Prerequisites: BIOL 3166. Theories of evolution and forces which affect gene frequencies. *(Fall)*

BIOL 4121. Biometry. (4) Prerequisite: one course in statistics. Design and analysis of experiments. Three lecture hours and one laboratory period of three hours a week. *(Spring)*

BIOL 4144. Advanced Ecology. (4) (W) Prerequisite: BIOL 3144. Energy flow, nutrient cycles, community structure, population growth, and regulation. Three

lecture hours and one laboratory period of three hours a week. *(Alternate Spring)*

BIOL 4149. Limnology and Oceanography. (4) Prerequisite: BIOL 2130. Geological, physical, chemical, and biological aspects of lakes, streams, estuaries and oceans. Three lecture hours and one laboratory period of three hours a week. *(Fall)*

BIOL 4162. Environmental Biotechnology I. (3) Prerequisite: BIOL 3161 or BIOL 3199. Applications of biotechnology to solve real-world environmental civil-engineering problems working in interdisciplinary teams. Three lecture hours per week. *(Fall)*

BIOL 4163. Environmental Biotechnology II. (3) Prerequisite: BIOL 3161 or BIOL 3199 and permission of instructor. Applying biotechnology in the laboratory to solve real-world environmental civil-engineering problems working in teams. One laboratory period and two lecture hours per week. *(Spring)*

BIOL 4167. Medical Genetics. (3) Prerequisite: BIOL 3166. Detection of and insight into intrauterine, chromosomal, genetic, and molecular abnormalities. *(Spring)*

BIOL 4168. Recombinant DNA Techniques. (4) Prerequisite: BIOL 3166 or CHEM 4165 and permission of the instructor. Modern molecular biological methods (such as DNA cloning, gel electrophoresis, nucleic acid hybridization, PCR, and DNA sequencing) data analysis and interpretation. Two lecture hour and two laboratory periods of three hours a week. *(Fall)*

BIOL 4171. Cell Physiology. (3) Prerequisite: BIOL 3111. The fundamental physiochemical properties of cells. *(Spring)*

BIOL 4184. Plant Biotechnology. (3) Prerequisites: BIOL 3111, 3166 and CHEM 2132 or permission of Department. A laboratory-oriented course designed to integrate plant molecular biology, recombinant DNA technology, and plant cell and tissue culture. One lecture hour and two laboratory periods of three hours a week. *(On demand)*

BIOL 4189. Mechanisms in Development. (3) Prerequisite: BIOL 4283 or permission of the Department. Cellular and molecular bases of differentiation; an exploration of the experimental analysis of causal and controlling factors in development. *(Spring)*

BIOL 4199. Molecular Biology. (3) Prerequisites: BIOL 3111, 3166 and CHEM 2132. Structural and functional interaction of nucleic acids and proteins in the replication, transcription, and translation of genetic material. *(Spring)*

BIOL 4205. Advanced Horticulture. (3) Prerequisite: BIOL 3202. Topics in ornamental horticulture and landscaping, including greenhouse projects and field trips. Two lecture hours and three hours of lab a week. *(Spring)*

BIOL 4221. Plant Systematics. (4) (W) Prerequisite: BIOL 3166. Identification and classification of vascular plants, including experimental concepts of speciation. Three lecture hours and one laboratory period of three hours a week. *(Spring)*

BIOL 4223. Mycology. (3) (W) Prerequisites: BIOL 2130; Permission of department for graduate credit. Morphology, life cycles, ecology, taxonomy, medical importance, and economic significance of the fungi and organisms historically aligned with the fungi. *(On demand)*

BIOL 4223L. Mycology Laboratory. (1) Prerequisite or corequisite: BIOL 4223; Permission of department for graduate credit. One laboratory period of three hours a week. *(On demand)*

BIOL 4229. Dendrology. (4) Prerequisite: BIOL 4221. The identification, structure, function, ecology, reproduction, and evolutionary relationships of woody plants. Three lecture hours and one three-hour lab a week. *(Fall)*

BIOL 4233. Parasitology. (3) Prerequisites: BIOL 2130. Morphology, life cycles, ecology, taxonomy, and medical and economic importance of parasites. Three lecture hours a week. *(On demand)*

BIOL 4233L. Parasitology Laboratory. (1) Prerequisite or corequisite: BIOL 4233. One laboratory period of three hours a week. *(On demand)*

BIOL 4234. Wildlife Biology. (3) (W) Prerequisite: BIOL 3144. Concepts, principles and techniques of wildlife biology. Value, demography, management, and conservation. *(On demand)*

BIOL 4234L. Wildlife Biology Laboratory. (1) Lab is required. One laboratory period of three hours a week plus field trips. *(On demand)*

BIOL 4235. Mammalogy. (4) Prerequisite: BIOL 3233 or 4293. Taxonomy, anatomy, physiology, and life histories of the mammals. Three lecture hours and one laboratory period of three hours a week. *(Fall)*

BIOL 4242. The Biology of Birds. (3). Prerequisite: BIOL 3144 or permission of department. Overview of general avian biology, including taxonomy and anatomy, but concentrating on behavior, ecology and conservation of birds. Focus will be on birds of the southeastern U.S. Three lecture hours and one laboratory period of three hours per week. *(Spring)*

BIOL 4242L. The Biology of Birds Lab. (1). Meets for one three-hour period per week (Spring). The laboratory and field portion of the Biology of Birds will focus on field identification and inventory techniques, with an introduction to anatomy. Students will need binoculars. *(Spring)*

BIOL 4243. Animal Behavior. (3) Prerequisite: BIOL 2130. An ethological approach to how animals respond

to their environment. Causation, development, and adaptive significance of behavior in social systems. *(Fall)*

BIOL 4243L. Animal Behavior Laboratory. (1) Prerequisite or corequisite: BIOL 4243. One laboratory period of three hours a week. *(Fall)*

BIOL 4244. Conservation Biology. (3) (W) Prerequisite: BIOL 3144. Conservation values, extinction rates, genetic diversity, demography, habitat fragmentation, reserve management, ecological restoration. *(Yearly)*

BIOL 4244L. Conservation Biology Laboratory. (1) Prerequisite or corequisite: BIOL 4244. One laboratory period of three hours a week plus field trips. *(Fall)*

BIOL 4250. Microbiology. (3) Prerequisite: BIOL 3111. Morphology, physiology, pathogenicity, metabolism, and ecology of bacteria, viruses, protozoa, and fungi. Aquatic, dairy, and food microbiology. *(Fall, Spring)*

BIOL 4250L. Microbiology Laboratory. (1) (W) Prerequisite or corequisite: BIOL 4250. One laboratory period of three hours a week. Attendance mandatory for safety training. *(Fall, Spring)*

BIOL 4251. Immunology. (3) Prerequisites: BIOL 3166. Cellular, molecular and genetic basis for immunity; physical chemistry of antigens and antibodies and their interactions; defense mechanisms. *(Spring)*

BIOL 4251L. Immunology Laboratory. (1) Prerequisite or corequisite: BIOL 4251. One laboratory period of three hours a week. *(Spring)*

BIOL 4253. Marine Microbiology. (4) Prerequisites: BIOL 4250 and 4250L. Bacteria, fungi and viruses of marine origin, and their response to the salt, temperature, pressure and nutrient environment of the ocean. Roles of marine microorganisms in public health, pollution and fouling. Three lecture hours and one laboratory period of three hours a week. *(Spring)*

BIOL 4254. Epidemiology. (3) Prerequisite: BIOL 1259 or 4250. History and practices of epidemiology with emphasis on modes of transmission of clinically important infectious agents and the analysis of epidemiological data. Three lecture hours a week. *(On demand)*

BIOL 4255. Bacterial Genetics. (3) Prerequisite: BIOL 3166 or permission of Department. Regulation of gene expression in bacterial systems. Bacteriophage genetics. DNA transfer in bacteria. *(Spring)*

BIOL 4256. Pathogenic Bacteriology. (3) Prerequisite: BIOL 4250. Cellular and molecular interactions of mammalian hosts with procaryotic parasites. *(Fall)*

BIOL 4256L. Pathogenic Bacteriology Laboratory. (1) (W) Prerequisite: BIOL 4250L. Prerequisite or corequisite: BIOL 4256. One laboratory period of three hours a week. *(Fall)*

BIOL 4257. Microbial Physiology and Metabolism. (3) Prerequisite: BIOL 4250. Lectures in microbial metabolism and physiology, including such topics as bacterial nutrition, transport mechanisms, catabolism and energy production, biosynthesis, global regulation of gene expression. Three one-hour lectures per week. *(Spring)*

BIOL 4257L. Microbial Physiology and Metabolism Lab. (1) Prerequisite or corequisite: BIOL 4257. Laboratory exercises covering such topics in general microbiology as characterization of microbial growth, transport, preparation and use of cell-free systems, isolation and electrophoresis of periplasmic proteins, isolation and characterization of membrane lipids, and the polymerase chain reaction. One three-hour lab per week. *(On demand)*

BIOL 4259. Virology. (3) Prerequisites: BIOL 4250, 4250L and CHEM 2132. Morphology, classification, genetics, and pathogenicity of bacterial and animal viruses. *(Fall)*

BIOL 4259L. Virology Laboratory. (1) Prerequisite or corequisite: BIOL 4259. One laboratory period of three hours per week. *(On demand)*

BIOL 4260. Population Genetics. (3) Prerequisite: STAT 1221, BIOL 3166. The genetics of qualitative and quantitative traits in populations, including an assessment of the factors affecting the extent and pattern of the genetic variation in these traits. *(On demand)*

BIOL 4277. Endocrinology. (3) Prerequisites: BIOL 3273. Endocrine glands and their physiological roles in metabolism, growth and reproduction. *(Spring)*

BIOL 4277L. Endocrinology Laboratory. (1) Prerequisite or corequisite: BIOL 4277. One laboratory period of three hours a week. *(On demand)*

BIOL 4279. Neurobiology. (3) Prerequisite: BIOL 3273. Physiology and anatomy of nervous systems, especially mammalian. *(Spring)*

BIOL 4279L. Neurobiology Laboratory. (1) Prerequisite or corequisite: BIOL 4279. One laboratory period of three hours a week. *(Spring)*

BIOL 4282. Developmental Plant Anatomy. (3) Prerequisite: BIOL 2130. Study of plant cells, tissues, organs, and patterns of growth and differentiation. *(On demand)*

BIOL 4282L. Developmental Plant Anatomy Laboratory. (1) Prerequisite or corequisite: BIOL 4282. One laboratory period of three hours a week. *(On demand)*

BIOL 4283. Animal Development. (3) Prerequisite: BIOL 3111. Developmental processes occurring chiefly during gametogenesis, fertilization, early embryogenesis, and organogenesis. *(On demand)*

BIOL 4283L. Animal Development Laboratory. (1) Prerequisite or corequisite: BIOL 4283. One laboratory period of three hours a week. *(On demand)*

BIOL 4291. Histology. (4) Prerequisite: BIOL 2130. Animal tissues and organs; techniques of preparing tissues for analysis. Three lecture hours and one laboratory period of three hours a week. *(On demand)*

BIOL 4292. Advances in Immunology. (3) Prerequisite: BIOL 4251 or permission of Department. Current topics in immunology with particular emphasis upon the genetic systems and molecular mechanisms underlying immune reactions. Additional work required by graduate students. *(Fall)*

BIOL 4293. Comparative Vertebrate Anatomy. (4) Prerequisite: BIOL 3111. Comparison of selected anatomical systems across vertebrates, with emphasis on evolution and functional analyses. Three hours of lecture and one laboratory period of three hours per week. *(Spring)*

BIOL 4405. Internship/Laboratory Research. (1-3) Prerequisite: permission of the instructor, and permission of the Biotechnology Program director. A biotechnology-oriented internship with either an organization or within a biotechnology-related laboratory within the Departments of Biology, Civil Engineering, or Chemistry. This course is required to obtain a Minor in Biotechnology. *(Spring, Summer, Fall)*

BIOL 4600. Senior Seminar. (1) (O,W) Prerequisite: Senior standing. Required of all majors. Student presentation of oral and written reports from pertinent biological literature. Exit exam for biology majors will be administered. *(Fall, Spring, Summer)*

BIOL 4601. Honors Seminar. (2) (O,W) Open by invitation to juniors. Exploration of the nature of science, ethics in science, critical analysis, hypothesis testing and statistical analysis, peer review, and research skills. Students analyze professional research papers, present their analyses orally, select an Honors Advisor, and write a research proposal. Exit exam for biology majors will be administered. Two lecture hours with occasional additional hours to attend special lectures and seminars. *(Spring)*

BIOL 4700. Honors Research I. (3) Prerequisite: BIOL 4601. Senior status. Independent Honors project: proposal, and research. By invitation. *(Fall, Spring, Summer)*

BIOL 4701. Honors Research II. (3) (O,W) Prerequisite: BIOL 4700. Independent Honors project: thesis preparation and presentation of results. May be substituted for BIOL 4600 and for one lab. *(Fall, Spring, Summer)*

BUSINESS LAW (BLAW)

BLAW 3150. Business Law I. (3) Prerequisite: INFO 2130, junior standing, business major or permission of the department. A study of the legal setting of business and its relationship to the business firm. Topics covered include: the nature of law and the court system, criminal and civil procedure, alternative dispute resolution, constitutional authority to regulate business, business ethics, criminal law, torts, contracts, the law of sales, intellectual property, and cyberlaw. *(Fall, Spring)*

BLAW 3250. Business Law II. (3) Prerequisite: BLAW 3150; junior standing, business major or permission of the department. The study of the Uniform Commercial Code. Subjects covered include commercial paper, bank deposits and collections, letters of credit, documents of title, secured transactions, creditors rights and bankruptcy, agency law, employment law and government regulation of business, business organizations and securities regulation, real and personal property, insurance, wills, trusts, and estates. *(Yearly)*

BUSINESS HONORS (BUSN)

BUSN 1100. Freshman Honors Seminar. (1). Prerequisites: Freshman standing in the Business Honors Program. A study of selected topics that impact the potential for success of business honors students in school and beyond. Topics include university life, corporate and community interaction, career selection, keys to success and practitioner interaction, among others. (*Fall*)

BUSN 2000. Topics in Business and Economics. (1-3) Current topics from business and economics. May be repeated for credit as topics vary with permission of student's major Department Chair. *(On demand)*

BUSN 2400. Business Honors Internship. (1) Prerequisites: Sophomore, junior or senior students in good standing in the Business Honors Program, and the completion of INFO 2130 or equivalent. Requires permission of Business Honors Program Coordinator. May be taken for repeat credit with different companies for up to a maximum of three (3) semester hours of credit. Provides a meaningful work experience, appropriate for the level of completed coursework of the student. Requires 50-150 hours of supervised employment. Requires a summary paper describing the business issues and processes learned through the experience. Internship proposals may be initiated by the student or by the Business Honors Program Coordinator. Students should consult with the Coordinator of the Business Honors Program in advance of registration to verify acceptability of work experience. Proposal forms must be completed and approved prior to registration. *Graded on a Pass/No Credit Basis.* (*Fall, Spring, Summer*)

BUSN 3770. Business Honors Thesis Topics. (1) Prerequisite: permission of the Business Honors Program Coordinator. Exploration of current business research topics through presentations by business faculty. *Graded on a Pass/No Credit Basis.* (*Spring*)

BUSN 3780. Business Honors Seminar. (3) Prerequisites: permission of the Business Honors Program Coordinator. Exploration of current topics in business and the methods of research appropriate to them. Development of research project proposal for Business Honors Thesis (BUSN 3790). *(Spring)*

BUSN 3790. Business Honors Thesis. (3) Prerequisites: BUSN 3780 and permission of Business Honors Coordinator. Honors project directed by Business Honors committee or assigned faculty member. One faculty contact hour per week and independent research. *(On demand)*

CIVIL AND ENVIRONMENTAL ENGINEERING (CEGR)

CEGR 2101. Civil Engineering Drawing. (2) Introduction to engineering drawing in the environmental, geotechnical, transportation, and structural sub-disciplines of civil engineering, including sketching, principles of Mechanical drawing, and computer aided drawing (CAD). CAD utilizes the MOSAIC computing environment. One hour of lecture and three hours of laboratory per week. *(Fall)*

CEGR 2102. Engineering Economic Analysis. (3) Prerequisite: ENGR 1201. Economic analysis of engineering solutions; present and annual worth analysis; cost benefit analysis; internal rate of return analysis; bonds and cost estimating. Three hours per week. *(Fall)*

CEGR 2104. Surveying and Site Design. (3) Prerequisite: ENGR 1202. Elements of plane surveying, including taping, use of level, transit, theodolite, and total station; topographical surveying and mapping; error adjustment; area and volume computations; introduction to photogrammetry; site development; computer applications. One hour of lecture and 3 hours of field work for four weeks: three hours of lecture for 11 weeks. *(Spring)*

CEGR 2154. Design Project Lab. (3) (O) Prerequisite: CEGR 2102. Corequisite: ENGR 1202. Problem definition, evaluation of design alternatives, design concepts, conceptual design. Students work together in teams to find, present, and defend their solutions to real world civil engineering problems. One hour of lecture and 3 hours of laboratory per week. *(Spring)*

CEGR 3090. Special Topics in Civil Engineering. (1-4) Prerequisite: Permission of CE Advisor. Examination of specific new areas emerging in the various fields of civil engineering based upon and synthesizing knowledge students have gained from engineering science, mathematics, and physical science stems of the core curriculum. May be repeated for credit. *(On demand)*

CEGR 3122. Structural Analysis. (3) Prerequisites: MEGR 2144 and MATH 2171 and junior standing. Analysis of statically determinate and indeterminate beams, trusses and frames to include shear and moment diagrams, rough deflected shapes and deflections; influence lines and criteria for moving loads; indeterminate analyses to include methods of consistent deflection, slope deflection, and moment distribution. *(Fall)*

CEGR 3141. Introduction to Environmental Engineering. (3) Prerequisite: MATH 2171, CHEM 1251, and junior standing. Environmental engineering concepts, including stream pollution analysis, water and wastewater treatment processes; solid and hazardous waste management practices; pollution problems and controls; mass balance analyses, and review of pertinent legislation. *(Fall)*

CEGR 3143. Hydraulics and Hydrology. (3) Prerequisites: MEGR 2141 and MATH 2171 and junior standing. Fluid properties, pressure, closed-conduit flow, pipe network, pumps, open channel flow, weirs, orifices, flumes; precipitation, runoff, groundwater flow, steam flow, flow measurement. *(Fall)*

CEGR 3153. Transportation Laboratory. (1) (W) Corequisite: CEGR 3161. Design of transportation systems, including highways, airports, pipelines, and mass transit; route layout, geometric design and earthwork calculations; computer-aided system simulation and evaluation. One hour of lecture and three hours of laboratory per week. *(Spring)*

CEGR 3155. Environmental Laboratory. (1) (W) Prerequisite: CHEM 1251L, Corequisite: CEGR 3141. Laboratory problems in environmental engineering. Emphasis on analysis and presentation of results as well as on the significance of results as they affect theory and/or practice. One hour of lecture and three hours of laboratory per week. *(Spring)*

CEGR 3161. Transportation Engineering I. (3) Prerequisite: MATH 2241; CEGR 2102, 2104, and junior standing. Analysis of transportation facilities; planning, location, and economic considerations, with special emphasis on land transportation. *(Fall)*

CEGR 3201. Systems and Design I. (3) Prerequisites: CEGR 2154, Senior standing; three of the following and the rest in progress: CEGR 3122, 3151, 3143, 3161, 3278. Systems engineering techniques applied to civil engineering problems emphasizing methodological considerations and engineering projects carried out by small groups of students. *(Fall)*

CEGR 3202. Systems and Design II. (4) Prerequisites: CEGR 3201 in immediate previous semester. Continuation of CEGR 3201. Creatively investigate the produce alternative solutions for a comprehensive engineering project resulting in written and verbal class presentations. One hour of lecture and three hours of laboratory per week. *(Spring)*

CEGR 3212. Computer Applications in Civil Engineering. (3) Prerequisite: Three of the following:

CEGR 3122, 3141, 3143, 3161, 3278. Application of computers and numerical methods to various types of civil engineering problems. Examinations in depth of selected civil engineering problems. *(On demand)*

CEGR 3221. Structural Steel Design I. (3) Prerequisites: CEGR 3122 and CEGR 3255 or permission of CE Advisor. Analysis and design of structural steel components with emphasis on theories necessary for a thorough understanding of the design procedure. Design philosophies and types of steel structures. Columns, tension members and laterally supported beams are considered. General Flexural theory, including bending of unsymmetrical sections. Current AISC Specifications used. *(Fall)*

CEGR 3225. Reinforced Concrete Design I. (3) Prerequisite: CEGR 3122 and CEGR 3255 or permission of CE Advisor. Analysis and design of reinforced concrete components with emphasis on fundamental theories. Mechanics and behavior of reinforced concrete. Flexural members to include singly and doubly-reinforced beams of various cross sections (rectangular, T-beams, joists, one-way slabs, and others). Shear in beams and columns. Short columns to include uniaxial and biaxial bending. Construction of short column interaction diagrams. Introduction to footings. Current ACI Specifications. *(Fall)*

CEGR 3232. Urban Engineering. (3) Prerequisite: Permission of CE Advisor. An examination of those societal problems of metropolitan regions most amenable to engineering solutions. Current urban literature will be reviewed in seminar, and selected topics amenable to engineering analysis will be studied. Written reports will be presented. *(On demand)*

CEGR 3255. Structural Materials Laboratory I. (1) (W) **Prerequisite**: CEGR 3122. Composition, properties, and testing of: wood, natural and artificial aggregates, bitumins, portland cement concrete, pozzolans, and structural metals. Data analysis, presentation, and report writing. One hour of lecture and three hours of laboratory per week. *(Spring)*

CEGR 3258. Geotechnical Laboratory. (1) (W) Corequisite: CEGR 3278. Test to determine engineering properties of soils; consistency, permeability, shear strength, and consolidation. Data analysis, presentation and report writing. One hour of lecture and three hours of laboratory per week. *(Spring)*

CEGR 3278. Geotechnical Engineering. (3) Prerequisite: MATH 2171, and MEGR 2144. Soil origin, formation, composition, and classification; permeability; seepage; soil mechanics principles, including stresses, shear strength, and consolidation; foundations, retaining structures, and slope stability. Integration of design and technical reporting. *(Fall)*

CEGR 3282. Professional Development. (1) Prerequisite: graduation date before next fall semester. A series of one-hour lectures by faculty and invited speakers on basic concepts of professionalism and the nature and purpose of engineering ethics. *Pass/No Credit grading.* *(Fall)*

CEGR 3695. Civil Engineering Cooperative Education Seminar. (1) Required of co-op students following each work semester. Presentation of engineering reports on work done prior semester. *(Fall, Spring, Summer)*

CEGR 3890. Individualized Study. (1-3) Prerequisite: Permission of CEE Advisor. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses. May be repeated for credit. *(On demand)*

CEGR 3990. Undergraduate Research in Civil Engineering. (1-4) Prerequisite: Permission of CE Advisor. This course involves independent study of a theoretical and/or experimental problem in a specialized area of Civil Engineering. May be repeated for credit. *(On demand)*

CEGR 4090. Special Topics in Civil Engineering. (1-4) Permission of CE Advisor. Study of specific new areas emerging in the various fields of civil engineering. May be repeated for credit. *(On demand)*

CEGR 4108. Finite Element Analysis and Applications. (3) Prerequisite: CEGR 3122 with a grade of C or better. Finite element method and its application to engineering problems. Application of displacement method to plane stress, plane strain, plate bending and axisymmetrical bodies. Topics include but are not limited to dynamics, fluid mechanics, and structural mechanics. *(Spring)*

CEGR 4121. Prestressed Concrete Design. (3) Prerequisites: CEGR 3225 and 4224 or permission of CE Advisor. Analysis and design of prestressed components and systems, including materials and systems for prestressing, loss of prestress, flexural and shear design in accordance with current building codes, analysis of indeterminate prestressed systems, and control of camber, deflection and cracking. *(On demand)*

CEGR 4123. Bridge Design. (3) Prerequisites: CEGR 3221 and 3225, or permission of CE Advisor. Review of bridge design codes and loadings; superstructure and substructure design of short, intermediate, and long span bridges constructed of steel and concrete; earthquake design; segmental and cable-stayed bridges. *(Spring) (Alternate years)*

CEGR 4124. Masonry Design. (3) Prerequisite: CEGR 3122 with a grade of C or better and CEGR 3225. Introduction of masonry material and engineering and materials properties and testing procedures. Design of reinforced and nonreinforced masonry (clay and concrete) walls, beams, and columns for vertical, winde, and seismic loads. Analysis and design of masonry structures (including torsion) and introduction to computer applications. *(On demand)*

CEGR 4128. Matrix Methods of Structural Analysis. (3) Prerequisite: CEGR 3122 or permission of CE Advisor. Derivation of the basic equations governing linear

structural systems. Application of stiffness and flexibility methods of trusses and frames. Solution techniques utilizing digital computer. *(On demand)*

CEGR 4141. Process Engineering. (3) Prerequisite: CEGR 3141 or permission of CE Advisor. Applications of material and energy balance principles to the study of chemical, biological, and environmental engineering processes. Overview of applied biotechnology, engineering thermodynamics, and kinetics. *(Fall)*

CEGR 4142. Water/Wastewater Engineering. (3) Prerequisite: CEGR 3141or permission of CE Advisor. Analysis and design of water and wastewater treatment processes including physical, chemical and biological treatment. Computer-aided design of treatment systems. *(Spring)*

CEGR 4143. Solid Waste Management. (3) Prerequisite: CEGR 3141 or permission of CE Advisor. Solid waste management, sources, generation rates, processing and handling, disposal, recycling, landfill closures, and remedial actions for abandoned waste sites. *(Spring) (Alternate years)*

CEGR 4144. Engineering Hydrology. (3) Prerequisite: CEGR 3143. The quantitative study of the various components of the water cycle, including precipitation, runoff, ground water flow, evaporation and transpiration, steam flow. Hydrograph analysis, flood routing, frequency and duration, reservoir design, computer applications. *(On demand)*

CEGR 4145. Groundwater Resources Engineering. (3) Prerequisite: CEGR 3143. Overview of hydrological cycle principles of ground water flow and well hydraulics. Regional groundwater flow and flow nets. Water chemistry and contamination. Applications of groundwater modeling. *(Fall) (Alternate years)*

CEGR 4146. Advanced Engineering Hydraulics. (3) Prerequisite: CEGR 3143 or permission of CE Advisor. Problems of liquids as applied in civil engineering; open channel flow; dams and spillways; water power; river flow and backwater curves; pipe networks, fire flow, sewage collection, groundwater, computer applications. *(On demand)*

CEGR 4161. Advanced Traffic Engineering. (3) Prerequisite: CEGR 3161 or permission of CE Advisor. Analysis of basic characteristics of drivers, vehicles, and roadway that affect the performance of road systems. Stream flow elements, volume, density, speed. Techniques of traffic engineering measurements, investigations and data analysis, capacity analysis. Intersections, accidents, parking. *(Fall)*

CEGR 4162. Transportation Planning. (3) Prerequisite: CEGR 3161. Urban transportation; travel characteristics of urban transportation systems; analysis of transportation-oriented studies; analytic methods of traffic generation, distribution, modal split, and assignment; traffic flow theory. *(On demand)*

CEGR 4171. Urban Public Transportation. (3) Prerequisite: CEGR 3161 or permission of CE Advisor. Planning, design, and operation of bus, rail, and other public modes. Relationship between particular modes and characteristics of urban areas. Funding, security and other administrative issues. *(On demand)*

CEGR 4181. Human Factors in Traffic Engineering. (3) Prerequisite: CEGR 3161 or permission of CE Advisor. Study of the driver's and pedestrian's relationship with the traffic system, including roadway, vehicle, and environment. Consideration of the driving task, driver and pedestrian characteristics, performance and limitations with regard to traffic facility design and operation. *(On demand)*

CEGR 4182. Transportation Environmental Assessment. (3) Prerequisites: Senior standing and permission of CE Advisor. A study of the environmental impact analysis and assessment procedures for transportation improvements. Route location decisions. Noise, air quality, socio-economic, and other impacts. (*On demand*)

CEGR 4183. Traffic Engineering Studies. (3) Prerequisite: STAT 3128. Introduction to the traffic engineering studies most used by traffic engineers, including data collection techniques, statistical analysis procedures, report writing and presentation. One hour of lecture and three hours of laboratory per week. *(On demand)*

CEGR 4184. Highway Safety. (3) Prerequisite: CEGR 3161 and STAT 3128. Engineering responses at the state and local levels to the problem of highway safety. Extent of the highway safety problem, elements of traffic accidents, common accident countermeasures, collection and analysis of accident data, evaluation of safety-related projects and programs, and litigation issues. *(On demand)*

CEGR 4185. Geometric Design of Highways. (3) Prerequisite: CEGR 3153 and CEGR 3161. Theory and practice of geometric design of highways including intersections, interchanges, parking and drainage facilities. Driver ability, vehicle performance, safety and economics are considered. Two hours of lecture and three laboratory hours per week. (*On demand*)

CEGR 4222. Structural Steel Design II. (3) Prerequisite: CEGR 3122 with a grade of C or better and CEGR 3221. Analysis and design of structural steel components and systems with emphasis on theories necessary for a thorough understanding of the design of complete structures. Compression members affected by local buckling, continuous beams, and beam columns are covered. Welded and bolted connections. Current AISC Specifications used. *(Spring)*

CEGR 4224. Advanced Structural Analysis. (3) Prerequisite: CEGR 3122 with a grade of C or better. A continuation of CEGR 3122. Methods to determine deflections in structural members, including moment area, conjugate beam, virtual work, and matrix stiffness methods. Project to compare analysis techniques and

introduce use of structural analysis computer programs. *(Spring)*

CEGR 4226. Reinforced Concrete Design II. (3) Prerequisite: CEGR 3122 with a grade of C or better and CEGR 3225. Analysis and design of reinforced concrete components and systems with emphasis on the fundamental theories necessary for a thorough understanding of concrete structures. Concentrically loaded slender columns, slender columns under compression plus bending. Wall footings and column footings. Analysis of continuous beams and frames. Total design project involving the analysis and design of a concrete structure. Current ACI Specifications used. *(Spring)*

CEGR 4241. Chemical Processes in Water and Wastewater Treatment. (3) Prerequisites: CHEM 1251 and CEGR 3141, or permission of CE Advisor. Chemical principles involved in the treatment of water and wastewaters; principles of chemical equilibrium relevant to natural water systems; the nature and effect of chemical interactions of domestic and industrial waste effluents on natural water systems. (*On demand*)

CEGR 4262. Traffic Engineering. (3) Prerequisite: CEGR 3161 or permission of CE Advisor. Operation and management of street and highway systems. Traffic control systems, traffic flow theory, and highway capacity. Evaluation of traffic engineering alternatives and the conduct of traffic engineering studies. *(Spring)*

CEGR 4270. Earth Pressures and Retaining Structures. (3) Prerequisites: CEGR 3122 and 3278 or permission of CE Advisor. Earth pressure theories, effects of wall friction and external loads (including earthquake); design of rigid retaining walls (including structural details); sheetpile wall design; soil reinforcement systems for retaining structures; computer applications. *(On demand)*

CEGR 4271. Pavement Design. (3) Prerequisites: CEGR 3161 and 3278, or permission of CE Advisor. Pavement design concepts and considerations; engineering properties of pavement materials, including soils, bases, asphalt concrete, and portland cement concrete; design of flexible and rigid pavements including shoulders and drainage; computer applications for pavement analysis and design. (*On demand*)

CEGR 4278. Geotechnical Engineering II. (3) Prerequisite: CEGR 3278 or permission of CE Advisor; corequisite: CEGR 3258. Design of shallow and deep foundations, including structural considerations; lateral earth pressure theories; design of rigid and flexible earth retaining structures; advanced aspects of slope stability analysis; and computer applications. *(Spring)*

CEGR 4892. Individualized Study and Projects. (1-6) Prerequisites: Permission of CE Advisor. Individual investigation and exposition of results. May be repeated for credit. *(On demand)*

CHEMISTRY (CHEM)

Separate lecture and laboratory sections--Although the laboratory and lecture sections of CHEM 1111, 1112, 1203, 1204, 1251, 1252, 2131 and 2132 are taught as separate courses, it is strongly recommended that students take the appropriate laboratory concurrently with the lecture. Students with severe scheduling problems or students with course programs that do not require the laboratory may take the lecture without the laboratory. Students who withdraw from a lecture course will automatically be dropped from the corresponding laboratory unless prior approval of the Chemistry Department is obtained. ***Students using CHEM 1111 and 1112 or CHEM 1203 and 1204 or CHEM 1251 and 1252 to satisfy the General Education requirements for the B.A. and B.S. degree must also take the appropriate associated laboratory courses (i.e., CHEM 1111L, CHEM 1203L, or CHEM1251L).***

CHEM 1111. Chemistry in Today's Society. (3) For students not majoring in a Physical or Biological Science, Engineering, or science-oriented preprofessional program. Qualifies as a prerequisite only for CHEM 1112. The role of chemistry in society and the impact of chemistry on society. An introduction to the chemical concepts needed to understand many of the numerous scientific problems confronting society today. Three lecture hours and one Problem Session hour per week. (Credit will be given for only one course: 1111, 1203, or 1251.) (*Fall, Summer*)

CHEM 1111L. Laboratory in Chemistry. (1) Prerequisite or corequisite: CHEM 1111. Laboratory exercises to demonstrate what chemists do, techniques used in the laboratory, and the limitations inherent in any laboratory experiment. One three-hour laboratory per week. (Credit will be given for only one course: 1111L, 1203L, or 1251L.) (*Fall, Summer*)

CHEM 1112. Chemistry in Today's Society. (3) Prerequisite: CHEM 1111. Continuation of CHEM 1111. Does not qualify as a prerequisite for any other chemistry course. Three lecture hours and one Problem Session hour per week. (Credit will be given for only one course: 1112, 1204 or 1252.) (*Spring, Summer*)

CHEM 1112L. Laboratory in Chemistry. (1) Prerequisite: CHEM 1111 and 1111L. Prerequisite or corequisite: CHEM 1112. Continuation of CHEM 1111L. One three-hour laboratory per week. (Credit will be given for only one course: 1112L, 1204L, or 1252L.) (*Spring, Summer*)

CHEM 1203. General Chemistry. (3) Primarily for nursing majors. Qualifies as a prerequisite only for CHEM 1204. Fundamentals of chemistry and selected topics from inorganic chemistry. Three lecture hours and one Problem Session hour per week. (Credit will be given for only one course: 1111, 1203, or 1251.) (*Fall, Summer*)

CHEM 1203L. General Chemistry Laboratory. (1)

Prerequisite or corequisite: CHEM 1203. Laboratory investigations into the nature of inorganic compounds. One three-hour laboratory per week. (Credit will be given for only one course: 1111L, 1203L, or 1251L.) (*Fall, Summer*)

CHEM 1204. General Chemistry. (3) Prerequisite: CHEM 1203. Continuation of CHEM 1203, with emphasis on organic chemistry and selected topics in biochemistry. Does not qualify as a prerequisite for any other chemistry course. Three lecture hours and one Problem Session hour per week. (Credit will be given for only one course: 1112, 1204, or 1252.) (*Spring, Summer*)

CHEM 1204L. General Chemistry Laboratory. (1) Prerequisites: CHEM 1203 and 1203L. Perquisite or corequisite: CHEM 1204. Continuation of CHEM 1203L with emphasis on the reactions and characterization of organic compounds. One three-hour laboratory per week. (Credit will be given for only one course: 1112L, 1204L, or 1252L. (*Spring, Summer*)

CHEM 1251. Principles of Chemistry. (3) A principles-oriented course for science majors. Fundamental postulates and laws of chemistry; the relationship of atomic structure to physical and chemical properties of the elements. Three lecture hours and one Problem Session hour per week. (Credit will be given for only one course: 1111, 1203, or 1251.) (*Fall, Spring, Summer*) (*Evenings*)

CHEM 1251L. Principles of Chemistry Laboratory. (1) Prerequisite or corequisite: CHEM 1251. Experimental investigations involving the fundamental postulates and laws of chemistry. One three-hour laboratory per week. (Credit will be given for only one course: 1111L, 1203L, or 1251L.) (*Fall, Spring, Summer*) (*Evenings*)

CHEM 1252. Principles of Chemistry. (3) Prerequisite: CHEM 1251. Continuation of CHEM 1251. Three lecture hours and one Problem Session hour per week. (Credit will be given for only one course: 1112, 1204, or 1252.) (*Fall, Spring, Summer*) (*Evenings*)

CHEM 1252L. Principles of Chemistry Laboratory. (1) Prerequisites: CHEM 1251 and 1251L. Prerequisite or corequisite: CHEM 1252. Continuation of CHEM 1251L. One three-hour laboratory per week. (Credit will be given for only one course: 1112L, 1204L, or 1252L.) (*Fall, Spring, Summer*) (*Evenings*)

CHEM 1253L. Introduction to Modern Laboratory Methods. (1) Prerequisite or corequisite: CHEM 1252. For students planning to take additional chemistry courses; can be substituted for the 1252L requirement for all degrees in Chemistry. Open-ended studies on topics compatible with CHEM 1252 lecture materials. A quasi-research approach is used, involving modern instrumentation extensively. The background needed to utilize microcomputers in data acquisition and data reduction is presented. One three-hour laboratory per week. (*Spring*)

CHEM 2125. Inorganic Chemistry. (3) Prerequisite: CHEM 1252 with a grade of *C* or better. Descriptive inorganic chemistry including acid-based and non-aqueous solvent concepts. (*Spring*)

CHEM 2130. Survey of Organic Chemistry. (3) Prerequisite: CHEM 1251 and 1252, each with a *C* or better. A survey of organic chemistry, including aldehydes, ketones, amines, amides and carboxylic acids, designed to meet the needs of BA Biology majors. *(Spring)*

CHEM 2131. Organic Chemistry. (3) Prerequisite: CHEM 1251 and 1252, each with a grade of *C* or better. Descriptive principles and techniques of organic chemistry and their applications to reactions of aliphatic and aromatic compounds and natural products. (*Fall, Spring, Summer*)

CHEM 2131L. Organic Chemistry Laboratory. (1) Prerequisites: CHEM 1251, 1251L, 1252 and 1252L, each with a *C* or better. Prerequisite or corequisite: CHEM 2131 or 2130 with a grade of *C* or better. Laboratory investigations into the physical and chemical properties of organic compounds. One laboratory period of three hours per week. *(Fall, Spring, Summer)*

CHEM 2132. Organic Chemistry. (3) Prerequisite: CHEM 2131 with a grade of *C* or better. Continuation of CHEM 2131. Three lecture hours and one Problem Session hour per week. (*Fall, Spring, Summer*)

CHEM 2132L. Organic Chemistry Laboratory. (1) Prerequisite: CHEM 2131L with a grade of *C* or better. Prerequisite or corequisite: CHEM 2132. Continuation of CHEM 2131L. One laboratory period of three hours per week. (*Fall, Spring, Summer*)

CHEM 2136L. Organic Chemistry Laboratory. (1) Prerequisite or corequisite: CHEM 2132. Laboratory investigation involving a research-type project in lieu of CHEM 2132L. Available only upon departmental invitation. (*On demand*)

CHEM 2141. Survey of Physical Chemistry. (3) Prerequisites: CHEM 1252, 1252L with grades of *C* or better, MATH 1120 or one semester of calculus (high school or higher), PHYS 1101 or one semester of physics (high school or higher). A course designed for students in the life sciences or others desiring a one-semester survey of the physical aspects of chemistry. Application of thermodynamics to chemical reactions, energy transfer processes, and chemical and physical equilibria; the study of reaction rates and mechanisms; structure of gases, liquids, and solids; molecular structure and spectroscopy. *(Spring)*

CHEM 3090. Special Topics in Chemistry. (1-4) Prerequisite: Permission of Department. Topics chosen from analytical, biochemistry, inorganic, organic, and physical chemistry. Repeatable for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. (*On demand*)

CHEM 3111. Quantitative Analysis. (4) Prerequisites: CHEM 1252, 1252L with grades of *C* or better.

Introductory to quantitative and analytical chemistry. Principles of equilibrium, classical and simple instrumental approaches are considered. Two lecture hours and two laboratory periods of three hours each week. (*Fall*)

CHEM 3112. Modern Separation Techniques. (4) Prerequisites: CHEM 2131, 2131L and 3111 with grades of *C* or better. A theoretical and application course in modern separation techniques with emphasis on liquid and gas chromatography. Two lecture hours and two laboratory periods of three hours each week. (*Spring) (Alternate years*)

CHEM 3113. Survey of Instrumental Methods of Analysis. (4) Prerequisites: CHEM 3111 with a grade of *C* or better. Methods of instrumental analysis with emphasis on sample handling, instrument parameters, data handling, and trouble-shooting in various areas that include Potentiometry, Spectroscopy, Mass Spectrometry, and Chromatography. Either CHEM 3113 or 3112, but not both, may be used to meet requirements for the B.A. degree. Credit will not be given for both CHEM 3113 and 4111. Two lecture hours and two three-hour laboratory periods per week. *(Spring)*

CHEM 3141. Physical Chemistry. (3) Prerequisites: CHEM 1252, 1252L with a grade of *C* or better; MATH 1241 and 1242; PHYS 2102 and 2102L. Prerequisite or corequisite: At least one of the following: MATH 2241, 2242, 2164, 2171, 3125, or a Department-approved mathematics course. Quantum chemistry, atomic and molecular structure, spectroscopy. (*Fall*)

CHEM 3141L. Physical Chemistry Laboratory. (1) Prerequisite or corequisite: CHEM 3141. Experiments in laser spectroscopy, quantum mechanics, kinetics, and thermodynamics. One laboratory period of three hours per week. (*Fall*)

CHEM 3142. Physical Chemistry. (3) Prerequisites: CHEM 1252, 1252L with a grade of *C* or better; MATH 1241 and 1242; PHYS 2102 and 2102L. Prerequisite or corequisite: At least one of the following: MATH 2241, 2242, 2164, 2171, 3125, or a department-approved mathematics course. Kinetic theory of gases, statistical and classical thermodynamics, kinetics. (*Spring*)

CHEM 3142L. Physical Chemistry Laboratory. (1) Prerequisite: CHEM 3141L with a grade of *C* or better. Prerequisite or corequisite: CHEM 3141 or 3142. Continuation of CHEM 3141L. One laboratory period of three hours per week. (*Spring*)

CHEM 3197. Internship in Community Education and Service. (1-3) Prerequisites: Junior standing, acceptance into the program, and approval of Department. A project-oriented, service learning internship with a cooperating community organization. (Credit toward the B.A. and B.S. degrees in Chemistry will not be given.) May be repeated for credit with Department permission. Offered on a *Pass/No Credit basis* only. (*On demand*)

CHEM 3500. Chemistry Cooperative Education and 49ership Experience. (0) Prerequisites: Junior standing, chemistry through 2132 and acceptance into the Experiential Learning Program by the University Career Center. Enrollment in this course is required for chemistry majors during each semester or summer when they are working on a co-op or 49ership assignment. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (*On demand*)

CHEM 3695. Chemistry Seminar. (1) (W) Introduction to typical search methods, including computer searching, for the chemical reference works and chemical literature. Use of these search techniques for background development. Writing short papers on assigned topics in journal format. One three-hour laboratory session per week. (*Spring*)

CHEM 4090. Special Topics in Chemistry. (1-4) Prerequisite: Permission of the instructor. Selected topics in chemistry. Lecture and/or laboratory hours will vary with the nature of the course taught. Repeatable for credit. *(On demand)*

CHEM 4095. Topics for Teachers. (1-4) Prerequisite: Permission of instructor. Selected topics in chemical education. Lecture and/or laboratory hours will vary with the nature of the course taught. Repeatable for credit. *(On demand)*

CHEM 4111. Instrumental Analysis. (4) Prerequisites: CHEM 3111, 3141, 3141L with a grade of *C* or better. Selected modern instrumental methods of analysis, including theory and practice, with considerable attention given to the instrument and elementary electronics involved in the techniques. Two lecture hours and six hours of lab per week. (*Spring*)

CHEM 4121. Advanced Inorganic Chemistry. (4) Prerequisites: CHEM 3142, 3142L with a grade of *C* or better. Theoretical inorganic chemistry including the application of physicochemical principles to the study of inorganic systems. Laboratory work involves inorganic preparations and characterization techniques. Three lecture hours and one laboratory period of three hours a week. (*Fall*)

CHEM 4133. Methods of Organic Structure Determination. (2) Prerequisites: CHEM 2132, 2132L with grade of *C* or better. Study and application of modern techniques, primarily spectroscopy, to determine the structure of organic molecules. One hour of lecture and one laboratory period of three hours each week. (*Spring*)

CHEM 4134. Organic Reaction Mechanisms. (2)

Prerequisites: CHEM 2132, 2132L with grade of *C* or better. Mechanistic and theoretical topics which are beyond the scope of CHEM 2131/2132, including orbital symmetry control of organic reactions, the Hammett Equation and other linear free energy relationships, heterocyclic compounds, polycyclic aromatic compounds, organic photochemistry, carbynes, nitrenes, arynes and other short lived, reactive intermediates. (*Spring) (Alternate years*)

CHEM 4135. Concepts and Techniques in Organic Synthesis. (2) Prerequisite or corequisite: CHEM 4133. Modern techniques of organic synthesis. Laboratory includes one or more multi-step syntheses of complex molecules. One hour of lecture and one laboratory period of three hours each week. (*Spring) (Alternate years*)

CHEM 4165. Principles of Biochemistry I. (3) Prerequisite: CHEM 2132 with a grade of *C* or better. A study of the structures, properties, and functions of biological molecules, bioenergetics of biological reactions, and enzyme catalysis, with particular emphasis on the underlying chemical principles, including thermodynamics and kinetics. (*Fall*)

CHEM 4165L. Principles of Biochemistry I Laboratory. (1) Prerequisite: CHEM 2132L with a grade of *C* or better. Prerequisite or corequisite: CHEM 4165. Physical properties of biological molecules and an introduction to experimental techniques of biochemical research. Eleven four-hour lab periods. (*Fall*)

CHEM 4166. Principles of Biochemistry II. (3) Prerequisite: CHEM 4165 with a grade of *C* or better. A study of various metabolic pathways and information transfer, including molecular aspects of cell biology and genetics, with particular emphasis on the underlying chemical reactions, including thermodynamics and kinetics. (*Spring*)

CHEM 4167. Structure and Mechanism in Protein Chemistry. (3) Prerequisites: CHEM 4165, and either CHEM 4166 or BIOL 4171, or permission of the instructor. Examination of structures, properties, and functions of proteins, enzyme catalysis, and bioenergetics, emphasizing underlying mechanistic chemical and biochemical principles. *(Spring) (Alternate years)*

CHEM 4171. Biochemical Instrumentation. (4) Prerequisites: CHEM 4165 and 4165L with a grade of *C* or better or the permission of the department. Modern instrumental methods used in biorelated areas such as biochemistry, biotechnology, and medical technology. Theory and practice. Potentiometry, spectrophotometry, chromatography, sedimentation, and electrophoresis. Two lecture hours and two three-hour laboratory periods per week. (*Spring*)

CHEM 4175. Physical Biochemistry. (3) Prerequisites: CHEM 4165, 4165L, 4166, and 3141 with a grade of *C* or better. Colloid systems, equilibria in biological fluids, mass and energy transport in fluids and in association with membranes, energy storage and dissipation with relation to specific chemical bonding, enzyme kinetics. (*On demand*)

CHEM 4185. Chemical Fate of Pollutants. (3) Prerequisites: Senior or Graduate Standing and CHEM 2132. Chemical reactivity and fate of pollutants (in air, water, soil) in terms of their chemical structure and energetics, mechanisms, structure/energy relationships and their interaction with reactive environmental species including light. *(Spring) (Alternate years)*

CHEM 4200. Computational Chemistry. (4) Prerequisite (BA): CHEM 2125 or 2141 or permission of instructor. Prerequisite or corequisite (BS and MS): CHEM 3141 or permission of instructor. Electronic and molecular mechanics-based computational methods, including properties, optimized equilibrium and transition state structures and potential energy surfaces of reactions. Three lecture hours and three hours of laboratory each week. Additional projects required of graduate students. *(Fall, Spring)*

CHEM 4695. Chemistry Seminar. (1) (W) (O) Prerequisite: CHEM 3695 and senior standing. Discussion of recent developments and special topics in chemistry. Written and oral reports are required. Repeatable for credit. *(Fall, Spring)*

CHEM 4696. Chemistry Seminar. (1) (W) (O) Prerequisite: CHEM 3695, CHEM 4695, B.S. chemistry major, and senior standing. Discussion of recent developments and special topics in chemistry. Written and oral reports are required. *(Fall, Spring)*

CHEM 4900. Directed Undergraduate Research. (1-4) Prerequisite: Permission of the instructor overseeing the research. Independent study and research in any of these fields of chemistry: organic, physical, analytical, inorganic chemistry or biochemistry. Hours for laboratory and library work to be determined. Repeatable for credit. (*Fall, Spring, Summer*)

CHILD AND FAMILY DEVELOPMENT (CHFD)

CHFD 2111. Child Study: Interpreting Children's Behavior. (3) Growth of individuals and the forces which influence this growth. Current theories of child development with emphasis on the complex interaction between heredity and environmental factors. (*Fall, Summer)*

CHFD 2113. Infant and Early Years. (3) Examination of development from its beginnings to early childhood with emphasis on theories, research, and other data relative to infancy and the early years and implications for curriculum design. *(Fall, Summer)*

CHFD 2115. Education of the Young Child. (3) Developmental needs of children as related to group care situations, curriculum decisions, and the design of early learning environments. Emphasis on current issues, the role of the caregiver (parent and/or teacher),

and the process of guiding and teaching young children. (Designed to complement Practicum II). *(Spring)*

CHFD 2412. Practicum I: Observing and Recording Children's Behavior. (3) Investigates the purposes and methods of observation of young children. Content includes observational activities, actual and simulated, individual and group. Students will observe, record, and analyze children's physical-motor, social, emotional, moral, and cognitive development using developmental theory. (Designed as the Field Study for CHFD 2111). *(Fall)*

CHFD 2416. Practicum II: The Child and the Community. (3) A supervised practicum with placements in settings depicting care and educational learning experiences for children. Emphasis on program components, the evaluation and development of materials and practices for care and education. Students spend two half-days per week in placement. (Designed as the Field Study for CHFD 2115). *(Spring)*

CHFD 3112. Approaches to Preschool Education. (3) (W) Prerequisite: Open only to CHFD majors and minors with a GPA of at least 2.5. Strategies for program analysis, design, implementation, and evaluation of programs for infants and young children. *(Fall)*

CHFD 3113. Parent Education. (3) Prerequisite: Open only to CHFD majors and minors with a GPA of at least 2.5. An emphasis on communication, home-school partnerships, family dynamics, and the community/school relationship. *(Spring, Summer)*

CHFD 3115. Learning and Development. (3) Prerequisite: Open only to CHFD majors and minors with a GPA of at least 2.5. Examination of the relationship of learning and development with emphasis on conceptualizing child development and interpreting data related to growth and development. Specific attention to the affective, cognitive, and psychomotor domains and theories as seen in a multicultural context. *(Fall, Spring, Summer)*

CHFD 3412. The Family and the Community (Birth to 3 Years). (3) Prerequisite: Open only to CHFD majors and minors with a GPA of at least 2.5. Influence of family and community on the development of infants and young children in the first three years of life is investigated through field-based experiences. Students complete an intensive internship in settings with children of typical and atypical ability. Family contact and parent interaction are emphasized. *(Fall)*

CHFD 3416. Internship in Child and Family Development. (12) Prerequisite: Open only to CHFD majors and minors with a GPA of at least 2.5 overall, and 2.75 in the major, and by permission of advisor. Intensive work with children and families in the field planned by student and advisor with focus on integration of theory and practice. *(Spring)*

CHFD 3619. Senior Seminar in Child and Family Development. (3) (O) Prerequisite: Open only to CHFD majors and minors with a GPA of at least 2.5 overall, and 2.75 in the major, and by permission of advisor. A synthesizing course of study focusing on review, compilation, analysis, and evaluation of the literature, research, and experiences relevant to the student's area of focus. Students will present a plan of action/study for approval prior to registration for this semester. *(Spring)*

CHFD 3800. Individual Study in Child and Family Development. (1-6) Prerequisite: Permission of the student's advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. *(Fall, Spring, Summer)*

CHFD 4000. Topics in Child and Family Development. (1-6) May include classroom and/or clinical experiences in the content area. With Department approval, may be repeated for credit for different topics. *(Fall, Spring, Summer)*

CHFD 4410. Student Teaching/Seminar: B-K Child and Family Development. (15) (O) Prerequisites: Approval of an Application for Student Teaching. Planned sequence of experiences in the student's area of specialization conducted in an approved setting under the supervision and coordination of a University supervisor and a cooperating teacher. Student must demonstrate the competencies identified for the B-K teaching field. Approximately 35-40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

CHINESE (CHNS)

CHNS 1201. Elementary Chinese I. (4) Fundamentals of the Chinese language, including speaking, listening comprehension, reading, and writing. (*Fall*)

CHNS 1202. Elementary Chinese II. (4) Prerequisite: CHNS 1201 or permission of the Department. Fundamentals of the Chinese language, including speaking, listening comprehension, reading, and writing. (*Spring*)

CHNS 2201. Intermediate Chinese I. (4) Prerequisite: CHNS 1202 or permission of the Department. Review of grammar, with conversation and composition. (*Fall*)

CHNS 2202. Intermediate Chinese II. (4) Prerequisite: CHNS 2201 or permission of the Department. Continued review of grammar, conversation, and composition. (*Spring*)

CRIMINAL JUSTICE (CJUS)

CJUS 1100. Introduction to Criminal Justice. (3) REQUIRED COURSE FOR MAJORS AND MINORS. Components of the criminal justice system are reviewed and their interrelatedness assessed; law enforcement, corrections and courts discussed; studies of the functions of the system reviewed. (*Fall, Spring*)

CJUS 2000. Introduction to Law Enforcement. (3) Critical examination of policing in terms of the past and present structures, methods, ethics, legal framework, and operations typical of contemporary American law enforcement agencies. *(Fall, Spring, Summer)*

CJUS 2102. Ethics and the Criminal Justice System. (3) The study of applied and professional ethics and ethical issues in the administration of justice. (*On demand*)

CJUS 2120. Juvenile Justice. (3) Intensive analysis of the administration of juvenile justice within the United States. Particular emphasis on decision making and procedures of police, courts, and correctional agencies for juveniles. (*On demand*)

CJUS 2154. Introduction to Corrections. (3) An overview of community and institutional corrections in the U.S. such as jails, probation, alternatives to incarceration, correctional institutions, treatment strategies, and parole. *(Yearly)*

CJUS 3000. Topics in Criminal Justice. (3) Prerequisite: CJUS 1100. Specialized criminal justice topics. May be repeated for credit. *(On demand)*

CJUS 3100. Criminal Justice Theory. (3) REQUIRED COURSE FOR MAJORS AND MINORS. This course provides students with an overview of the dominant theoretical explanations for crime and deviance. Special attention is given to the empirical research on these theories and their corresponding policy/program recommendations for reducing crime and delinquency in society. (*Fall, Spring*)

CJUS 3101. Research Methods in Criminal Justice. (4) (W) REQUIRED COURSE FOR MAJORS. Prerequisite: CJUS 1100, STAT 1222, declared Criminal Justice major, and junior standing. Research designs, data collection, and data analysis relevant to criminal justice. (*Fall, Spring*)

CJUS 3102. American Criminal Courts. (3) Prerequisite: CJUS 1100. Analysis of the court component of criminal justice with emphasis on social science literature concerning prosecutors, defense attorneys, judges, juries, and court reform policies. (*Fall, Spring*)

CJUS 3110. Criminal Justice and the Law. (3) Nature and development of criminal law including the concepts of criminal liability, responsibility, and capacity; comprehensive analysis of the various crimes against persons, property, and morality. (*Fall, Spring*)

CJUS 3111. Criminal Procedure. (3) Examines the rules that govern everyday operation of the criminal justice system from investigation to appeal. *(Yearly)*

CJUS 3112. Famous Criminal Trials of the Twentieth Century. (3) Prerequisites: Introduction to Criminal Justice (CJUS 1100) and at least junior standing or with permission of instructor. This course is a study of various American criminal trials from 1900-1999, and its purpose is to review specific cases and determine their effect upon, and reflection of, American society and/or culture at the time. Some of the cases discussed may include Sacco and Vanzetti, Scottsboro Boys, Chicago 7, and Dr. Jeff MacDonald. *(Yearly)*

CJUS 3120. The Juvenile Offender. (3) Measurement of juvenile delinquency, explanations of delinquent behavior and policies intended to both prevent and respond to delinquent behavior. *(On demand)*

CJUS 3121. Juvenile Law. (3) Statutory and case law relating to juveniles with special emphasis on the North Carolina Juvenile Code. (*On demand*)

CJUS 3130. The Administration of Criminal Justice. (3) (W) (O) Examines major organizational theories and administrative functions with direct application to criminal justice agencies. *(Yearly)*

CJUS 3132. Interviewing in Criminal Justice. (3) (O) This course examines the interpersonal dynamics, theories, empirical research, and legal basis of the investigative interview necessary for the criminal justice professional. Special emphasis will be given to the establishment of rapport, the process of inquiry, the evaluation of response, cultural and age differences, and the need to remain within the legal bounds of the U.S. Constitution. *(Yearly)*

CJUS 3141. Law Enforcement Behavioral Systems. (3) Examines the issues surrounding the individual officer. Such issues include: selection, discretion, ethics, stress, the use of force, and the effects of culture. (*On demand*)

CJUS 3150. Community Corrections. (3) Structure, functions, and effectiveness of community corrections. Emphasis on the deinstitutionalization movement, community-based treatment centers, community service agencies, work release programs, and current trends in community corrections. (*Yearly*)

CJUS 3151. Institutional Corrections. (3) Structure, functions, and effectiveness of correctional institutions. Emphasis is on the history of corrections, classification of offenders, institutionalization, treatment programs, juvenile training schools, and the future of corrections. (Yearly)

CJUS 3152. Correctional Law. (3) Development, substance and operationalization of the law of corrections. (*Alternate years*)

CJUS 3153. Juvenile Corrections. (3) Examination of community-based and institutional correctional programs for juveniles and analysis of the effectiveness of these programs. *(On demand)*

CJUS 3200. Security and Loss Prevention. (3) Overview of the field of private security and loss prevention with emphasis on current legislation, loss prevention, risk management, and security countermeasures. (*Yearly*)

CJUS 3210. Problems and Decisions in Criminal Justice. (3) (W) Prerequisites: Junior standing and permission of the department. Evaluation of criminal justice policy and decision-making. (*On demand*)

CJUS 3220. The Criminal Offender. (3) Examines the research, theory, and practice of criminal behavior focusing primarily on interaction of the offender with social-environmental factors. (*On demand*)

CJUS 3400. Criminal Justice Practicum. (1-6) Prerequisite: CJUS 1100 and permission of the department and criminal justice agency. Supervised experience in a criminal justice agency. May be repeated for credit up to a maximum of 12 hours but with no more than six hours counting toward the major. *(Fall, Spring)*

CJUS 3800. Directed Individual Study. (1-4) Prerequisite: junior standing and permission of the department. Special problems. May be repeated for credit. *(Pass/No Credit grading) (Fall, Spring)*

CJUS 4000. Topics in Criminal Justice. (1-6) Prerequisite: Permission of the department. Specialized criminal justice topics. May be repeated for credit. *(Pass/No Credit grading* when taught as "Movies and the Portrayal of Crime and Justice.") (*Fall, Spring*)

CJUS 4101. Drugs, Crime and the Criminal Justice System. (3) Use of drugs and their relationship to crime, including the impact of drugs on the individual and the criminal justice system. (*On demand*)

CJUS 4103. International Criminal Justice. (3) Prerequisite: junior standing. Examination of the patterns and trends in international crime such as terrorism, transnational organized crime, and trafficking in people, and a review of how the legal traditions of common law, civil law, Islamic law and socialist legal systems are structured and function. (*On demand*)

CJUS 4160. Victims and the Criminal Justice System. (3) Relationship between victims of crime and the criminal justice system. Specific topics include an analysis of the characteristics of crime victims, victim reporting and nonreporting patterns, treatment of victims by the various segments of the criminal justice system, victim assistance programs and the issue of compensation and/or restitution for victims of crime. *(On demand)*

CJUS 4161. Violence and the Violent Offender. (3) Issues surrounding violence in today's society and their impact on offenders involved in homicide, child and domestic abuse, and other forms of violence. Examination of myths about violence, victim-offender characteristics and relationships, and theories of violence. *(On demand)*

CJUS 4162. Seminar on Sexual Assault. (3) (O) This course provides a comprehensive and systematic, critical examination of sexual exploitation in the United States. Topics include: historical and legal perspectives; theories of causation; empirical evidence and practical policy implications in the areas of rape, child sexual abuse, and incest; domestic violence; pornography; sexual harassment, nuisance and dangerous obsessions; and serial killing. A reliance on guest speakers at the local, state, national and international levels greatly diversify this course *(Yearly)*

CJUS 4400. Research Practicum. (3) Prerequisites: CJUS 3100 and CJUS 3101. Development, analysis and presentation of independent research under the supervision of a faculty member. Graduate students are encouraged to register for CJUS 6800. *(Fall, Spring)*

CONSTRUCTION MANAGEMENT (CMET)

CMET 1680. Professional Development I. (1) Prerequisite: Open to freshman level Civil Engineering Technology and Construction Management majors. Seminar discussing professional development issues relating to the civil engineering technology and construction management professions. One hour per week. *(Pass/No Credit grading) (Spring)*

CMET 2680. Professional Development II. (1) Prerequisite: Open to sophomore level Civil Engineering Technology and Construction Management majors. Seminar discussing professional development issues relating to the civil engineering technology and construction management professions. One hour per week. *(Pass/No Credit grading) (Spring)*

CMET 3224. Construction Project Administration. (3) Prerequisite: Junior Standing or AAS degree. A study of the project management processes used in the design and construction of civil engineering projects. Topics include the roles and responsibilities of project participants, project delivery methods, engineering and construction contracts, project control and documentation, and dispute resolution mechanisms. *(Spring)*

CMET 3680. Professional Development III. (1) Prerequisite: Open to junior level Construction Management majors. Seminar discussing professional development issues relating to the civil engineering technology and construction management professions. One hour per week. *(Pass/No Credit grading) (Spring)*

CMET 4073. Special Topics – Construction Management. (1-4) Prerequisite: senior standing and permission of instructor. A study of new and emerging technical topics pertinent to the field of construction management. May be repeated for credit. *(On demand)*

CMET 4125. Construction Codes and Contract Documents. (2) Prerequisites: Junior Standing or AAS degree. An analysis of construction contract documents, building codes, permits, and specifications. *(Fall)*

CMET 4127. Construction Law and Regulatory Issues. (3) Examination of the legal problems encountered by architects, engineers, contractors, owners, sureties, and lenders involved in the construction process. Special

emphasis on the legal rights and liabilities of the various participants in construction projects. Claims preparation, negotiation, arbitration, and litigation methods of dispute resolution. *(On demand)*

CMET 4228. Construction Office Operations. (2) Prerequisite: CMET 3224. A study of management issues encountered in home and job-site office operations. Topics include construction safety, insurance and risk management, labor relations, procurement, cost accounting, subcontracting, and labor and equipment resource allocation and management. *(Spring)*

CMET 4272. Capstone Project. (2) (W,O) Prerequisite: Senior standing in Construction Management and permission of the department. Utilization of students' previous course work to creatively investigate and produce solutions for a comprehensive construction management project. *(Spring)*

CMET 4680. Professional Development IV. (1) Prerequisite: Open to senior level Construction Management majors. Seminar discussing professional development issues relating to the civil engineering technology and construction management professions. One hour per week. *(Pass/No Credit grading) (Spring)*

COMMUNICATION STUDIES (COMM)

COMM 1101. Public Speaking. (3) (O) For students who want to upgrade their oral communication skills. Opportunity to study theory and practice of public speaking. Special emphasis placed on constructing and delivering speeches. *Restricted to Pre-Communication Studies majors and minors, English majors, Pre-Elementary Education, Pre-Kinesiology majors, and Pre-Special Education majors. (Fall, Spring, Summer) (Evenings)*

COMM 1107. Introduction to Communication Contexts. (3) A survey of the nature and practice of communication in interpersonal, small group, intercultural, organizational, public relations, and mass communication contexts. *(On demand)*

COMM 2100. Introduction to Communication Theory. (3) Introduces students to traditional and contemporary theories about human communication processes including the nature of theory building, and major theoretical developments within the field of communication. *Restricted to Pre-Communication Studies majors and minors. (Fall, Spring)(May not be taken more than twice.)*

COMM 2101. Introduction to Rhetorical Theory. (3) Evolution of rhetorical theory from ancient to modern times and examination of major rhetorical theorists. Emphasis on using rhetorical theory to better understand contemporary persuasive messages. *Restricted to Communication Studies majors and minors. (Fall, Spring)*

COMM 2102. Advanced Public Speaking. (3) Prerequisite: COMM 1101 or permission of the instructor. Advanced theory and practice of speaking in public. Research, composition, and delivery of various types of speeches and presentations. *Restricted to Communication Studies majors and minors. (Fall, Spring)*

COMM 2103. Argumentation and Debate. (3) Introduction to the basic theory and skills of argumentation and debate. Assumptions of argumentation, evidence, reasoning, argument construction, cross-examination, refutation, and ethics included. *Restricted to Communication Studies majors and minors. (Fall)*

COMM 2105. Small Group Communication. (3) Principles of discussion and deliberation in small groups. Practice in organizing, leading, and participating in various forms of group communication. Emphasis on problem solving and leadership skills. *Restricted to Communication Studies majors and minors. (Fall, Spring, Summer)*

COMM 2107. Interpersonal Communication. (3) Study of the dynamics of one-to-one human communication. The relation of language to human communication, perception and reality, self-concept, nonverbal communication codes, development of trust and self-disclosure, and development of positive communication style. *Restricted to Communication Studies majors and minors, Pre-Elementary Education, Pre-Kinesiology majors, and Pre-Special Education majors. (Fall, Spring)*

COMM 2110. Women and the Media. (3) Crosslisted as WMST 2110. Examination of messages about women as conveyed in contemporary media (magazines, newspapers, videos, the Internet, video games, television, and movies.) The role of gender in the power structures of the media producers is also analyzed. *(Fall)*

COMM 2120. Black Images in the Media. (3) Crosslisted as AFRS 2105. Examination of African-American images projected through electronic and print media, historically and currently. *(Yearly)*

COMM 2145: Principles of Public Relations. (3) Familiarize students with basic concepts and principles of public relations within the context of communication theory. Acquaints students with the history, functions, roles, social contexts, tools, techniques, and strategies of the profession. *Restricted to Communication Studies majors and minors. (Fall, Spring)*

COMM 3050. Topics in Communication Studies. (3) Prerequisite: COMM 1101. Timely and important areas relevant to communication studies. May be repeated for credit with permission of the major advisor. *(On demand)*

COMM 3051. Topics in Health Communication. (3) Timely and important areas relevant to the study of

health communication. May be repeated for credit with permission of the major advisor. *(On demand)*

COMM 3052. Topics in Mass Media. (3) Timely and important areas relevant to the study of the mass media. May be repeated for credit with permission of the major advisor. *(On demand)*

COMM 3054. Topics in Organizational Communication. (3) Timely and important areas relevant to the study of organizational communication. May be repeated for credit with permission of the major advisor. *(On demand)*

COMM 3055. Topics in Public Relations. (3) Timely and important areas relevant to the study of public relations. May be repeated for credit with permission of the major advisor. *(On demand)*

COMM 3100. Communication Research Methods. (3) (W) Prerequisites: COMM 2100 and STAT 1220 or 1222. Methods for systematic investigation of communication behavior in all primary communication contexts, including utilization of library materials and quantitative and qualitative techniques for data analysis. *Restricted to Communication Studies majors. (Fall, Spring)*

COMM 3101. Persuasion. (3) Prerequisite: COMM 2101. Emphasis on the theory and practice of persuasion. Topics include attitude modification, theories of persuasion, source credibility, persuasive strategies, ethics, and audience analysis. *Restricted to Communication Studies majors. (Fall, Spring)*

COMM 3110. Gender and Communication. (3) Crosslisted as WMST 3110. Examination of the relationship between language and gender. Topics covered include how language shapes perceptions of men/women; gender differences in verbal and nonverbal communication; and gendered communication in relationships, friendships, and the workplace. *(Spring)*

COMM 3115. Health Communication. (3) Prerequisite: COMM 2100 or HLTH 2101. This course is designed to provide a broad introduction to human communication in a health-care context. Emphasis will be on issues of social support, patient-health professional/caregiver interaction, organizational culture, planning health promotion campaigns, and cultural conceptions of health and illness. *Restricted to Communication Studies majors and minors. (Spring)*

COMM 3120. Communication and Mass Media. (3) Prerequisite: COMM 2100. A survey of the function and history of print and electronic media as forms of communication, their influence upon society, and the legal and economic environments in which they operate. *(Fall, Spring)*

COMM 3121. Mass Communication and Society. (3) Examines important issues involving mass communication. Critical study of the effect mass communication exacts on society. *(On demand)*

COMM 3130. Communication and Public Advocacy. (3) Prerequisite: COMM 2100. Examination of how symbols are used in public advocacy from both applied and theoretical perspectives with emphasis on rhetorical uses of language and non-verbal symbols in the creation and transmission of public messages. *Restricted to Communication Studies majors and minors. (Fall, Spring)*

COMM 3131. African-American Oratory. (3) Oratory by African-Americans using in-depth study of speech texts and video and general rhetorical principles to examine historic as well as lesser known speeches. *(On demand)*

COMM 3135. Leadership, Communication, and Group Dynamics. (3) Study of leadership theories, behaviors, and group processes. Emphasis on group dynamics in organizations and the role of the leader. Assessment of leadership style. *(Fall)*

COMM 3136. Leadership, Service, and Ethics. (3) The focus of this course is on leadership issues facing our society, the role of values and ethics in leadership, and servant leadership. *(Fall, Spring)*

COMM 3141. Organizational Communication. (3) Prerequisite: COMM 2100. Examines the importance of the operation of communication processes within organizations and between organizations and their environments. *Restricted to Communication Studies majors and minors. (Fall, Spring)*

COMM 3142. Applications in Organizational Communication. (3) Prerequisite: COMM 3141 or permission of the instructor. This course applies the principles, theory and concepts of organizational communication to organizational settings. This course further explores how organizational theories are realized in everyday organizational life through case studies, interviews, various research methodologies, assessments, and evaluations. *Restricted to Communication Studies majors. (Fall, Spring)*

COMM 3245. Public Relations Writing. (3) Prerequisites: JOUR 2160 and COMM 2145. Instruction and writing practice designed to develop the professional-level writing skills expected of entry-level public relations practitioners. Extensive writing exercises in preparing plans, releases, newsletters, brochures, web pages, media kits and other public relations products. Individual and group projects required. *Restricted to Communication Studies majors. (Fall, Spring)*

COMM 3246. PR Strategy. (3) Prerequisites: COMM 2145. This course focuses on the planning, problem-solving, and management skills required in the contemporary practice of public relations. Students will analyze a variety of public relations models and will learn to develop problem statements, goals, objectives and tactics, identify and research target publics, and evaluate strategic program results. *Restricted to Communication Studies majors. (Fall, Spring)*

COMM 3403. Debate Practicum. (2) Prerequisites: COMM 2103 or equivalent and permission of instructor. Application of debate principles and practices as a member of UNC Charlotte Debate Team. Research, argument construction, and tournament competition required. Can be repeated four times. No more than four hours of COMM 3403 may be used toward requirements for the minor. *(Fall, Spring)*

COMM 3880. Independent Study. (1-3) Prerequisites: COMM 1101, permission of instructor and major advisor. Area of study beyond the scope of current offerings to be devised by student and faculty member. May be repeated. Three hours of COMM 3880 may be used toward the minor with prior approval of the Departmental Chairperson. *(Fall, Spring, Summer)*

COMM 4050. Topics in Communication Studies. (3) Timely and important areas relevant to communication studies. May be repeated for credit with permission of the major advisor. *(On demand)*

COMM 4101. Media and the Law. (3) Prerequisite: At least junior standing or permission of instructor. Survey of legal rights, restrictions, and ethical considerations in field of communication including the First Amendment, libel, invasion of privacy, obscenity law, regulation of electronic media, relationships between media and judiciary. *Restricted to Communication Studies majors. (Fall, Spring)*

COMM 4102. Federal Interpretation of the First Amendment. (3) Prerequisite: At least junior standing or permission of instructor. In-depth case analysis of tests determining Constitutional boundaries of expression, including clear and present danger, prior restraints, fighting words/symbolic speech, strict scrutiny, obscenity, indecency. *(On demand)*

COMM 4115. Seminar in Health Communication. (3) Prerequisite: COMM 3115, senior standing, and Communications Studies majors only. Course provides in-depth examination of a major area of health communication utilizing extensive readings, discussion and written work. *(Yearly)*

COMM 4141. Advanced Organizational Communication. (3) Prerequisite: COMM 3141. Critical examination of the communication practices of organizations which accomplish such tasks as establishing organizational identification, influencing organizational members, and making decisions. Includes application of research methods to assess and analyze an organization's communication practices. *Restricted to Communication Studies majors. (Fall, Spring)*

COMM 4145. Communication Campaigns. (3) Prerequisites: COMM 3245 and COMM 3246. Lectures, workshops, and guest speakers provide knowledge to enable students to research, design, implement, and complete public relations projects for community-based, not-for-profit organizations. The class is structured and run in a manner similar to a professional public relations agency with students assuming appropriate agency roles. May be repeated once. *Restricted to Communication Studies majors. (Fall, Spring)*

COMM 4147. International Public Relations. (3) Prerequisite: COMM 2145. Course examines the complexities of public relations practice in an international setting. Includes overview of the factors that complicate communication across cultures and borders and an examination of the effect those factors have on public relations practice in specific global regions. *Restricted to Communication Studies majors. (Yearly)*

COMM 4410. Professional Internship. (3 or 6) Prerequisites: Junior or Senior standing, Communication Studies majors or minors, Journalism minors, 2.0 GPA in all course work in the major or minor. Students work 8-10 hours per week (total 120 hours per semester) for 3 credit hours, or 16-20 hours (total 240 hours per semester) for 6 credit hours in an approved placement. With permission of the student's advisor and the Communication Studies Internship Coordinator, the course may be repeated for credit in a different internship placement. *(Pass/No Credit) (Fall, Spring, Summer)*

DANCE (DANC)

DANC 1210. Ballet for Majors I. (2) Prerequisite: Dance major or minor or permission of instructor. Beginning Ballet Technique. May be repeated for credit. A grade of C or above is required to move to DANC 2210. Three contact hours. *(Fall, Spring)*

DANC 1211. Modern Dance for Majors I. (2) Prerequisite: Dance major or minor or permission of instructor. Beginning Modern Dance Technique. May be repeated for credit. A grade of C or above is required to move to DANC 2211. Three contact hours. *(Fall, Spring)*

DANC 1212. Ballet I. (2) Fundamentals of ballet technique, barre and floor work. May be repeated for credit. Three contact hours. (*Fall, Spring*)

DANC 1213. Ballet II. (2) Prerequisite: DANC 1212 or permission of instructor. Continuation of DANC 1212. May be repeated for credit. Three contact hours. (*Fall, Spring) (On demand*)

DANC 1214. Modern Dance I. (2) Combination of improvisation, elementary modern styles. May be repeated for credit. Three contact hours. (*Fall, Spring)*

DANC 1215. Modern Dance II. (2) Prerequisite: DANC 1214 or permission of instructor. Continuation of DANC 1214. May be repeated for credit. Three contact hours. *(Fall, Spring) (On demand)*

DANC 1280. Improvisation. (2) Prerequisite/ corequisites: DANC 1210, DANC 1211. Exploring body movement in time and space using different energies and relationships in order to understand how movement

becomes a language of expression for composing original dances. (3 contact hours) *(Spring)*

DANC 2119. Anatomy for Dancers. (3) Study and application of basic anatomy and kinesiology principles to dance. (3 contact hours) *(Fall)*

DANC 2202. Contemporary Dance Technique, Style and Structure IV. (3) Prerequisite: DANC 2201 or permission of instructor. Continuation of DANC 2201. May be repeated for credit with not more than six hours applied toward required dance electives. Six contact hours. *(Fall)*

DANC 2210. Ballet for Majors II. (2) Beginning/Intermediate Ballet Technique. Prerequisite: DANC 1210, or permission of instructor. May be repeated for credit. A grade of C or above is required to move to DANC 3210. Three contact hours. *(Fall, Spring)*

DANC 2211. Modern Dance for Majors II. (2) Beginning/Intermediate Modern Dance Technique. Prerequisite: DANC 1211, or permission of instructor. May be repeated for credit. A grade of C or above is required to move to DANC 3211. Three contact hours. *(Fall, Spring)*

DANC 2216. Choreography I. (3) Prerequisites: DATH 1100, 1200, and DANC 1201, or permission of instructor. Exploration of fundamental elements and concepts for composing dance, dance/theatre, and performance art works. Four contact hours. *(Spring)*

DANC 2222. Ballet III. (2) Prerequisite: DANC 1213 or permission of instructor. Intermediate ballet; barre and centerwork. May be repeated for credit. Three contact hours. (*Spring*)

DANC 2224. Modern Dance III. (2) Prerequisite: DANC 1215 or permission of instructor. Intermediate modern dance technique. May be repeated for credit. Three contact hours. (*Spring*)

DANC 2226. Vintage Jazz Dance. (2) Traditional jazz dance style. May be repeated for credit. Three contact hours. (*Fall, Spring*)

DANC 2227. Contemporary Jazz Dance. (2) Contemporary jazz dance styles. May be repeated for credit. Three contact hours. *(Fall, Spring)*

DANC 2228. Music and Dance. (2) Prerequisite: DANC 1210, DANC 1211. Basic music fundamentals and materials for dancers that explore the intellectual, affective, and physical relationship of dance to music through the study of the rhythmic structure. Music and dance compositional forms as they evolved historically provide examples and models for study. (3 contact hours) *(Alternate Springs)*

DANC 3201-3202. Professional Training Certificate in Dance. (8) Prerequisite: Audition and DANC 2201 or permission of Department Chair. Both courses must be taken sequentially during the same academic year. First year of a two-year program of pre-professional technical dance training in ballet, performance experience, and professional dance company observation with the North Carolina Dance Theatre. Emphasis on adagio vocabulary and partnering skills. *(Fall, Spring)*

DANC 3210. Ballet for Majors III. (2) Intermediate/Advanced Ballet Technique. Prerequisite: DANC 2210, or permission of instructor. May be repeated for credit. Three contact hours. *(Fall, Spring)*

DANC 3211. Modern Dance for Majors III. (2) Intermediate/Advanced Modern Dance Technique. Prerequisite: DANC 2211, or permission of instructor. May be repeated for credit. Three contact hours. *(Fall, Spring)*

DANC 3221. Dance History I. (3) (A) Historical and cultural developments of theatrical dance from the Renaissance to the 20th century. *(Fall)*

DANC 3222. Dance History II. (3) (A) Historical and cultural influences affecting the development of dance in the Twentieth Century. *(Spring)*

DANC 3230. Choreography II. (3) Prerequisites: DANC 2201, 2216. Methods and sources for dance composition, culminating in creative experience. Four contact hours. *(Fall)*

DANC 4001. Topics in Dance. (1-3) Special topic in dance. May be repeated for credit with change in topic. Two to six contact hours. (*On demand*)

DANC 4110. Writing for Dance. (3) (W) Prerequisite: DANC 3102 or permission of instructor. Concert Dance and related professional communication is used as a basis for discussion and writing. Majors only. *(Fall)*

DANC 4201-4202. Professional Training Certificate in Dance. (8) Prerequisite: DANC 3202 and audition or permission of Department Chair. Both courses must be taken sequentially during the same academic year. Continuation of DANC 3201-3202 with emphasis on allegro vocabulary, technical precision of complex combinations and advanced performance work, culminating on the undergraduate "Professional Training Certificate in Dance."

DANC 4227. Dance Education Methods I. (3) Prerequisites: DANC 1202 or permission of instructor. Corequisite: DANC 4227L. Creative movement theories; techniques and skills for teaching the elementary school child. *(Fall)*

DANC 4227L. Elementary Clinical Experience. (1) Corequisite: DANC 4227. Observation and teaching in an elementary school setting. Application of methodologies introduced in DANC 4227. (2 contact hours) *(Fall)*

DANC 4257. Dance Education Methods II. (3) Prerequisite: DANC 1202 or permission of instructor. Corequisite: DANC 4257L. Experiences in techniques for teaching dance in elementary schools. *(Spring)*

DANC 4257L. Secondary Clinical Experience. (1) Corequisite: DANC 4257. Observation and teaching in a secondary school setting. Application of methodologies introduced in DANC 3257. (2 contact hours) *(Spring)*

DANC 4400. Internship in Dance (3-6) Prerequisite: GPA of at least 2.5, junior status, and permission of Department Chair. Research and/or in-service training for dance majors and minors in cooperating organizations. Specific content is based upon a contract between the students department and professional organization. Graded on a Pass/Fail basis. *(Fall, Spring, Summer)*

DANC 4467. Student Teaching/Seminar: K-12 Fine and Performing Arts: Dance. (15) (O) Prerequisite: approved application for student teaching; senior status; completion of professional education requirements; grades of *C* or better in all courses required for licensure. Corequisite: enrollment only in student teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in an appropriate grade level setting. *(Fall, Spring)*

DANC 4601. Individual Project. (1-6) Prerequisite: Permission of Department Chair. May be repeated for credit. *(Fall, Spring, Summer)*

DANCE AND THEATRE (DATH)

DATH 1100. Exploration of Voice and Movement. (3) (O) Creative and effective communication of ideas through the use of the body and voice. Will include physical and vocal technique, improvisation and group problem solving. Four contact hours. *(Fall, Spring)*

DATH 1200. Elements of Design for the Stage. (3) Elements and principles of design in relation to the performer, performance and performance space with emphasis on developing perceptual and communication skills through exposure to and analysis of a diverse selection of dance, theatre, and related-performance images. *(Spring)*

DATH 2210. Costume Design I. (3) An introduction to costume design theory and techniques for theatre, dance, and opera. *(Fall)*

DATH 2215. Stage Makeup. (3) Theories and techniques of applying and designing stage makeup. *(Spring)*

DATH 2220. Costume Techniques. (2) Corequisite: DATH 2220L. Introduction to costume shop equipment, sewing techniques, and construction of costume accessories. *(Fall, Spring)*

DATH 2220L. Costume Techniques Laboratory. (1) Corequisite: DATH 2220. Exploration of costume shop materials and construction procedures. Three laboratory hours per week. *(Fall, Spring)*

DATH 2230. Scenic Design I. (3) An introduction to scenic design theory and techniques for theatre, dance, and opera. *(Fall)*

DATH 2240. Stagecraft. (2) Corequisite: DATH 2240L. An introduction to theatrical scenery materials and construction procedures. Exploration of various roles in a scenic studio. *(Fall)*

DATH 2240L. Stagecraft Laboratory. (1) Corequisite: DATH 2240. Exploration of scenic materials and construction procedures. Three laboratory hours per week. *(Fall)*

DATH 2250. Lighting Design I. (3) An introduction to lighting design theory and techniques for theatre, dance, and opera. *(Spring, Alternate Falls)*

DATH 2260. Lighting Technology. (2) Corequisite: DATH 2260L. Fundamentals of stage lighting including instrument handling, focusing, basic electrical theory and practitioner roles. *(Spring)*

DATH 2260L. Lighting Technology. (1) Corequisite: DATH 2260. Exploration of stage lighting fixtures and techniques. Three laboratory hours per week. *(Spring)*

DATH 2670. Stage Management. (3) An introduction to Stage Management through theory and practice as it relates to live performance and the arts. *(Fall, Spring)*

DATH 2401. Production Practicum. (1) Practical application of production work in the areas of scenery, lighting, sound, costuming, properties, publicity, box office, house management, and stage management. May be repeated for credit. *(Fall, Spring)*

DATH 3111. Costume History. (3) Introduction to historical origins and evolution of clothing including social and economic factors that influenced development. *(Alternate Springs)*

DATH 3131. History of Ornament. (3) Form and function of furniture, architecture, and decoration through the ages. *(Alternate Springs)*

DATH 3220. Advanced Costume Techniques. (3) Prerequisite: DATH 2220 or permission of instructor. In-depth exploration of pattern development, draping, fabric modification, and construction of accessories. *(Alternate Springs)*

DATH 3241. Technical Design. (3) Prerequisite: DATH 2240 or permission of instructor. Exploration of topics related to Technical Design for performance including drafting, management, and structures. *(On demand)*

DATH 3260. Advanced Lighting Technology. (3) Prerequisite: DATH 2260 or permission of instructor.

In-depth exploration of dimming, control, paperwork, modern instrumentation. *(On demand)*

DATH 3265. Introduction to Computer Aided Drafting 2D. (3) An introduction to precision drafting and rendering using the computer. *(Fall)*

DATH 4001. Topics in Design & Production. (1-6) Special topics in Design & Production. May be repeated for credit. *(On demand)*

DATH 4210. Costume Design II. (3) Prerequisite: DATH 2210 or permission of instructor. Advanced costume design theory and projects. *(Alternate Springs)*

DATH 4230. Scenic Design II. (3) Prerequisite: DATH 2230 or permission of instructor. Advanced scenic design theory and projects. *(Alternate Springs)*

DATH 4233. Scenic Painting. (3) An introduction to basic scenic painting techniques, paint media, and materials. *(Alternate Falls)*

DATH 4250. Lighting Design II. (3) Prerequisite: DATH 2250 or permission of instructor. Advanced lighting design theory and projects. *(Alternate Falls)*

DATH 4601. Individual Project. (1-6) Permission of Department Chair. May be repeated for credit. *(Fall, Spring, Summer)*

DATH 4610: Advanced Design, Technology, & Management. (2-3) Prerequisite: Permission of instructor. Large-scale applications of design and production topics on realized productions. May be repeated for credit. *(On demand)*

ELECTRICAL AND COMPUTER ENGINEERING (ECGR)

ECGR 2103. Computer Utilization in C++. (3) An introduction to the use of computers and computing methods to solve engineering problems. Structures and object-oriented programming design using C++.

ECGR 2111. Network Theory I. (3) Prerequisites: MATH 1242 and PHYS 2101 both with a grade of C or better. Corequisites: ECGR 2155, MATH 2171, PHYS 2102, or permission of the Department. Introduction to Kirchoff's laws and terminal equations. Circuit analysis techniques and network theorems. Singularity functions and signals. Transient and natural response of first and second order networks. State variable analysis.

ECGR 2112. Network Theory II. (3) Prerequisites: ECGR 2111, MATH 2171, and PHYS 2102, all with a grade of C or better. Continuation of ECGR 2111. Introduction to sinusoidal steady state. Time frequency domain analysis. Power and energy. Two port networks. Fourier series. Introduction to Fourier and Laplace transforms.

ECGR 2155. Logic and Networks Laboratory. (1) (W) Prerequisites: MATH 1242 with a grade of C or better. Corequisites: ECGR 2111 and 2181 or permission of Department. Network measurements and applications, experimental logic design; introduction to laboratory equipment and techniques.

ECGR 2156. Instrumentation and Networks Laboratory. (1) (W) Prerequisites: ECGR 2155 (Logic and Networks Lab). Corequisites: ECGR 2112 (Network Theory II) and ECGR 2181 or permission of Department. Network measurements, applications, and instrumentations.

ECGR 2161. Basic Electrical Engineering I. (3) Prerequisite: PHYS 2101. Fundamental concepts and methods of analysis of D.C. and A.C. circuits, elementary operation of electronic devices. Not open to Electrical and Computer Engineering majors.

ECGR 2181. Logic System Design I. (3) Prerequisite: MATH 1242 with a grade of C or better or permission of the Department. Corequisite: ECGR 2155 or permission of the Department. Introduction to Boolean algebra; mixed logic; design of combinational circuits; introduction to sequential systems; MSI building blocks; includes laboratory design projects.

ECGR 2252. Electrical Engineering Design I. (2) (O) Prerequisites: ECGR 2111 and ECGR 2155 or equivalents. Corequisites: ECGR 2112 and ECGR 2181 or equivalents. Introduction to the electrical engineering design process including teamwork, design specifications, conceptual design, detailed design, design integration, cost estimation and market considerations. Product design projects are completed and laboratory prototypes are developed and tested by design teams. Oral presentations and written technical reports on the design projects are required.

ECGR 2255. Digital Design Laboratory. (2) Prerequisites: ECGR 2155 and ECGR 2181. Experiments in Digital Systems Design including the use of Programmable Logic Devices.

ECGR 3090. Special Topics in Electrical Engineering. (1-4) Prerequisite: Permission of the Department. The course builds upon and synthesizes knowledge from the engineering science, mathematics, and physical sciences stem of the core curriculum. The specific topics teach engineering analysis, synthesis, and design, while simultaneously affording an opportunity for the students to investigate an area of specialization. May be repeated for credit.

ECGR 3111. Signals and Systems. (3) Prerequisite: ECGR 2112 with a grade of *C* or better. Analysis of continuous-time signal and systems. Input-output relationships of linear time-invariant systems. Transient and steady state analysis. Frequency domain descriptions and Fourier analysis. Analysis and characterization of LTI systems using Laplace transforms.

ECGR 3112. System Analysis II. (3) Prerequisite: ECGR 3111 with a grade of *C* or better. A continuation of

ECGR 3111 emphasizing system response characteristics in the frequency domain. Introduction to techniques of analysis of continuous and discrete systems.

ECGR 3121. Introduction to Electromagnetic Fields. (3) Prerequisites: ECGR 2112 with a grade of C or better. A study of electric and magnetic fields using the vector formulation. Vector analysis. Electrostatics: potential functions, dielectrics, capacitance, energy, and forces associated with electric fields, solution of Laplance's and Poisson's equations. Magnetostatics: vector potential functions, Lorentz forces, hysteresis, magnetic polarization and induction, and energy. Gauss's, Ampere's, Faraday's laws, etc., leading to the Maxwell's equations.

ECGR 3122. Electromagnetic Waves. (3) Prerequisite: ECGR 3121 with a grade of *C* or better. A study of Maxwell's equations, transmission line theory, plane waves in media, propagation of electromagnetic waves in various media. The phenomena of reflection and refraction at interfaces of two dissimilar materials. Guided electromagnetic waves in coaxial cables and waveguides.

ECGR 3123. Data Communications and Networking. (3) Prerequisites: ECGR 2181, ECGR 2111. An introduction to data communications, including transmission media, signal encoding, link control, and multiplexing. Concepts of networking including protocols, LAN, WAN, and wireless networks

ECGR 3131. Fundamentals of Electronics and Semiconductors. (3) Prerequisite: ECGR 2112 with a grade of C or better. Study of the fundamental concepts and applications of semiconductor devices. Diode characteristics and applications, including clipping and rectifier circuits. MOS, JFET, and bipolar transistor fundamentals, including D.C. biasing and small-signal analysis of single-stage amplifiers. Operational amplifier fundamentals.

ECGR 3132. Electronics. (3) Prerequisites: ECGR 3131 with a grade of C or better. Low and high-frequency analysis of transistor amplifiers. Multistage and feedback amplifier design. Stability and oscillation. Operational amplifier design and applications.

ECGR 3133. Solid State Microelectronics I. (3) Prerequisites: ECGR 3121, PHYS 3141, or permission of the Department. Simple crystal structures, energy bands, and charge carriers in semiconductors, distribution functions for photons and electrons, optical and electrical properties, carrier diffusion, generation, and recombination.

ECGR 3134. Industrial Electronics. (3) Prerequisite: ECGR 3132 with a grade of *C* or better. High power solid state circuits. Topics include choppers, phase controlled rectifiers, triggering devices, inverters and dual converters, limiting and regulating circuits.

ECGR 3142. Electromagnetic Devices. (3) Prerequisite: ECGR 3121 with a grade of *C* or better. Principles of operation and basic design features of electromechanical energy converters. The role of the magnetic field in transformers and electrical machines. Generation of induced voltages. Electromagnetic torque development. Speed control. Circuit models and machine performance.

ECGR 3155. Systems and Electronics Laboratory. (1) (W) Prerequisites: ECGR 2112, and 2156. Corequisites: ECGR 3111 and 3131, or permission of the Department. Systems and signals measurements and applications; electronic circuits.

ECGR 3156. Electromagnetic and Electronic Devices Laboratory. (1) (W) Prerequisite: ECGR 3155. Corequisite:
ECGR 3132, or permission of the Department. Measurements and applications of electromagnetic and solid state devices.

ECGR 3157. Electrical Engineering Design II. (2) (O) Corequisites: ECGR 3111 and 3131 or permission of the Department. Prerequisites: ECGR 2112, 2252 and 2181. Application of conceptual design; circuit design; parameter sensitivity analysis; cost-performance tradeoff analysis and interconnection compatibility design. A design project completed in a laboratory setting and a written technical report and oral presentation on the project are required.

ENGR 3159. Professional Practice. (2) Prerequisite: Senior standing in engineering. Ethics; safety and liability in the manufacturing workplace; product design; product development; cost estimating for non-recurring engineering work; production planning; Total Quality Management; and effective technical presentation.

ECGR 3181. Logic System Design II. (3) Prerequisite: ECGR 2181 with a grade of *C* or better or permission of the Department. Digital systems design and test. Top-down design of multi-input based controller systems; programmable logic devices.

ECGR 3182. Digital Electronics. (3) Prerequisites: ECGR 3131 and 3181, both with a grade of C or better. Bipolar and field-effect transistors, switching characteristics, device models, logic families. Memory devices, one-shots, Schmitt triggers, logic gates, drivers. Use of logic analyzers.

ECGR 3183. Computer Organization and Programming Languages. (3) Prerequisite: ITCS 1215 and ECGR 3181. Introduction to key concepts in computer organization. Microprocessor design, assembly language programming, C programming, input/output, interrupts and traps, structured program development, parsers/interpreters/compilers. Emphasis on application of these concepts to computer engineering systems including microcomputers and embedded systems.

ECGR 3253. Senior Design I. (2) (W) (O) Prerequisites: Senior standing in engineering, ECGR 2155, 2156, 3111, and 3131, all with a grade of C or better. A project-oriented course stressing the planning

and design of experiments to support the student's project. Formation of the design problem and specification.

ECGR 3254. Senior Design II. (3) (W) (O) Prerequisite: ECGR 3253 with a grade of *C* or better. A continuation of ECGR 3253 consisting of project development and analysis, culminating in a written and oral presentation.

ECGR 3695. Electrical Engineering Cooperative Education Seminar. (1) Required of Co-op students during semesters immediately following each work assignment for presentation of engineering reports on work done the prior semester. This program is coordinated by the University Career Center.

ECGR 3890. Individualized Study. (1-3) Prerequisite: Permission of the Department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses. May be repeated for credit.

ECGR 3990. Undergraduate Research. (1-4) Prerequisite: Permission of the Department. This course involves the independent study of theoretical and/or experimental problems in the specialized area of engineering analysis and design. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. May be repeated for credit.

ECGR 4090. Special Topics in Electrical Engineering. (1-4) Prerequisite: Permission of the Department. Directed study of current topics of special interest. May be repeated for credit.

ECGR 4101. Embedded Systems. (3) Prerequisite: ITCS 3182 or ECGR 3183. Introduction to designing microcontroller-based embedded computer systems using assembly and C programs. Examination of real-time operating systems and their impact on performance. Computer engineering applications will be emphasized.

ECGR 4102. Engineering Simulation. (3) Crosslisted as ECGR 5102. Prerequisite: ECGR 2103 or permission of the Department. A wide range of simulation related topics will be introduced including the theory of simulation, characteristics of simulators, and trade-offs in simulation studies. Continuous and discrete simulation with primary emphasis on application of simulation techniques to engineering problems. Simulation of actual problems based on students' interest and experience areas.

ECGR 4103. Applied Computer Graphics. (3) Crosslisted as ECGR 5103. Prerequisite: Permission of the Department. Interactive graphics; raster, character, vector, graphics, display technologies; rotation, scaling, translating of graphics image; image processing/enhancement; feature extraction; 3-D graphics; hidden lines.

ECGR 4104. Computational Methods in Power Systems. (3) Crosslisted as ECGR 5104. Prerequisite: ECGR 4142 or permission of the Department. Numerical techniques for analysis, operation, and planning of power systems. Sparse matrix techniques applied to power flow algorithms. Economic operation of power systems. Optimum power flow.

ECGR 4111. Control Systems Theory I. (3) Prerequisite: ECGR 3112 with a grade of *C* or better. Transfer functions, block diagrams, and signal flow graphs. Feedback control system characteristics. The performance and stability of feedback systems using root locus and frequency response methods. Time domain analysis of control systems. The design and compensation of control systems.

ECGR 4112. Control Systems Theory II. (3) Prerequisite: ECGR 4111 with a grade of *C* or better. State space techniques and useful state space methods. System stability. Controllability and observability of linear systems. The formulation of the state equations for discrete-time systems and the analysis of these systems by matrices. Analysis of nonlinear systems. Optimal control systems studies.

ECGR 4113. Modeling and Analysis of Dynamic Systems. (3) Prerequisite: ECGR 3111 or permission of the Department. Models and dynamical properties of mechanical, thermal, and fluid systems, utilizing by analogy the properties of electrical circuit theory. Emphasis on the formulation of circuit models and the development of terminal equations of system components. Dynamic response to step, pulse, and sinusoidal driving functions using Laplace transforms. Sinusoidal steady-state and frequency response of systems.

ECGR 4121. Antennas. (3) Prerequisite: ECGR 3122 with a grade of *C* or better or permission of the Department. Radiation into free space, the point source, thin linear antenna, arrays of linear elements, aperture antennas, impedance, methods of feeding, matching and termination. Antenna systems.

ECGR 4122. Acoustics. (3) Prerequisite: ECGR 3122 with a grade of C or better. Vibrations and simple vibrating systems; radiating systems; plane waves of sound, dynamic analogies, microphones and other acoustic transducers; acoustic measurements.

ECGR 4123. Analog and Digital Communication. (3) Prerequisite: ECGR 3111 with a grade of C or better. Analysis and transmission of signals, including analog communication systems (amplitude and frequency modulation, effect of noise); digital communications systems (pulse code modulation, data transmission systems phase-shift keying, and frequency-shift keying, effect of noise).

ECGR 4124. Digital Signal Processing. (3) Prerequisite: ECGR 3111 with a grade of *C* or better. Sampling and signal recovery in linear systems; analysis of sampled systems; discrete and fast Fourier transforms; z-transform; discrete convolution; design of digital FIR and IIR filters.

ECGR 4125. Foundation of Optical Engineering. Crosslisted as ECGR 5125. Prerequisites: ECGR 3121 and PHYS 3141, both with a grade of C or better or permission of the Department. The engineering aspects and applications of modern optics, optical communications, optical materials, optical devices, basic optical fiber and integrated optics, optical signals, and optical networks, basic Fourier optics, and methods in optical signal processing. Signal and data processing, principles of integrated optics.

ECGR 4131. Linear Integrated Electronics. (3) Prerequisite: ECGR 3132 with a grade of *C* or better. Design of linear integrated circuits utilizing bipolar and MOS devices. Application in linear amplifier design, control, and processing of analog signals.

ECGR 4132. Analog Integrated Circuits Design. (3) Crosslisted as ECGR 5132. Prerequisite: ECGR 4131 with a grade of C or better or Permission of the Department. Topics include analog MOS modeling, design of current mirrors, references, and operational amplifiers. Both hand analysis and SPICE simulation utilized.

ECGR 4134. Solid State and Semiconductor Microelectronics II. (3) Prerequisites: ECGR 3133 with a grade of C or better or permission of the Department. PN-junctions and Schottky junctions; bipolar and field effect transistors; optoelectronic and heterojunction devices; lithography and integrated circuits; microwave devices; light emitting devices and detectors; quantum devices using superlattices; quantum wells and quantum dots; material preparation and characterization; and measurement techniques.

ECGR 4135. Physical Electronics. (3) Crosslisted as ECGR 5135. Prerequisite: ECGR 3122 or PHYS 3181 or permission of the Department. Dynamics of charged particles; electron motion in electromagnetic fields; types of electron emission; beam focusing; longitudinal and transverse beam waves; microwave generation; plasma parameters.

ECGR 4137. Device Electronics for Integrated Circuits. (3) Crosslisted as ECGR 5137. Prerequisites: ECGR 3132 with a grade of C or better or permission of the Department. The basic operating principles of electronic devices in integrated circuits are treated. The physical models of these devices are discussed. Graduate students are required to carry out laboratory experimentation.

ECGR 4138. Electronic Thin Film Materials and Devices. (3) Crosslisted as ECGR 5138. Prerequisite: ECGR 3132 or 3133, both with a grade of C or better or permission of the Department. Applications of thin films in microelectronics/optoelectronics manufacturing processes; vacuum technology, deposition techniques, and the characterization methods relevant to optoelectronic applications; thin film applications such as metallization, silicide formation, light emitting diodes (LED) and lasers, and doping of semiconductors.

ECGR 4139. Digital Communication Systems. (3) Crosslisted as ECGR 5139. Prerequisites: ECGR 2181 and 3131. Topics include digital data transmission systems, signal and system representation, digital system performance characterization, pulse code modulation, and statistical communications theory.

ECGR 4140. Introduction to VLSI Processing. (3) Crosslisted as ECGR 5140. Prerequisite: permission of the Department. Microelectronic fabrication; relevant materials, processes, and tools; fabrication of a simple structure in the VLSI clean room/lab.

ECGR 4141. Power System Analysis I. (3) Prerequisite: ECGR 3142 with a grade of *C* or better. Representation of power system components for analysis studies. Transmission line parameters. Network equations. Load flow analysis and numerical methods.

ECGR 4142. Power System Analysis II. (3) Prerequisite: ECGR 4141 with a grade of *C* or better. Economic operation of power systems. Short circuit studies. Symmetrical components. Transient stability analysis.

ECGR 4143. Electrical Machinery. (3) Prerequisite: ECGR 3142 with a grade of *C* or better. Advanced theory of transformers and rotating. Machines; harmonic and saturation effects on machine performance. Unbalanced operation and transient conditions.

ECGR 4146. Introduction to VHDL. (3) Crosslisted as ECGR 5146. Prerequisites: ECGR 3181 with a grade of C or better and knowledge of a computer language, or permission of the Department. Introduction to VHSIC Hardware Description Language (VHDL) including VHDL-based high-level design of microelectronic systems, VHDL programming, and VHDL synthesis; emphasis on learning and using industry-standard VHDL tools.

ECGR 4161. Introduction to Robotics. (3) Crosslisted as MEGR 4127. Prerequisite: ECGR 2103. Modeling of industrial robots including homogeneous transformations, kinematics, velocities, static forces, dynamics, computer animation of dynamic models, motion trajectory planning, and introduction to vision, sensors, and actuators.

ECGR 4162. Control of Robotic Manipulators. (3) Crosslisted as ECGR 5161. Prerequisites: ECGR 4161 and 4111. Control of industrial robots including linear, nonlinear, and adaptive control of robot's motion plus control of forces and torques exerted by the end-effector. Additional topics include computer animation of the controlled behavior of industrial robots, actuator and sensor types, robot vision, and control computer/robot interfacing.

ECGR 4165. Laser Electronics I. (3) Crosslisted as ECGR 5165. Prerequisites: ECGR 3122 and PHYS 3141, or permission of the Department. Basic principles of quantum electronics, interaction of light with atoms, properties of laser light, and laser applications. Electromagnetic aspects of lasers, Maxwell's Equations and beam, ray optics, matrix

methods for the analysis and synthesis of optical systems. Laser resonator design, oscillation modes, mode frequency and stability.

ECGR 4181. Computer Arithmetic. (3) Crosslisted as ECGR 5181. Prerequisite: permission of the Department. Principles, architecture, and design of fast two operand adders, multi-operand adders, standard multipliers and dividers. Cellular array multipliers and dividers. Floating point processes, BCD and excess three adders, multipliers and dividers.

ECGR 4182. Digital System Testing. (3) Prerequisite: ECGR 3181 with a grade of C or better or permission of the Department. System testing; Boolean difference; D-algorithm; checking experiments; redundancy, computer-aided digital test systems.

ECGR 4183. Network Synthesis. (3) Crosslisted as ECGR 5113. Prerequisite: ECGR 4113. The positive real concept, properties and methods of testing. Realizability conditions on driving point functions. Methods of synthesis of one-port. Physical realizability and properties of two-port networks. Transfer function synthesis: Approximation methods.

ECGR 4184. Device Characterization, Parameterization and Modeling. (3) Crosslisted as ECGR 5114. Prerequisite: ECGR 3132 permission of the Department. Advance device and circuit analysis; device and circuit simulation using SPICE, ECAP or equivalent. Parametric modeling of active devices. Device characterization and parameterization; temperature effects; thermal cycling. Analysis of device failure modes.

ECGR 4185. Advanced Electromagnetic Field Theory. (3) Crosslisted as ECGR 5123. Prerequisite: ECGR 3122 or permission of the Department. Maxwell's equations and propagation. Properties of guided and surface waves. Wave properties of light; physical and fiber optics.

ECGR 4186. Optical Communication and Optical Signals. (3) Prerequisites: ECGR 4125/5125 or permission of the Department. The course covers the fundamentals of modern optical networks, optical systems, and protocols. These include transmission, detection, multiplexing/demultiplexing and related prevailing technology.

ECGR 4187. Data Communications. (3) Crosslisted as ECGR 5187. Prerequisite: Permission of the Department. Principles of data communication; computer communications architecture (layering) with emphasis on the physical layer and data link layer, transmission media; analog and digital signal representation; data transmission basics; Shannon's theorem; error detection/correction; data compression; point-to-point protocols; multiplexing.

ECGR 4188. Advanced VLSI Systems Design. (3) Crosslisted as ECGR 5134. Prerequisite: ECGR 4433. A project-oriented course dealing with advanced topics in VLSI systems design and analysis such as circuit design techniques, array structures, performance estimation, automated routing, and device electronics.

ECGR 4190. Power Generation: Operation and Control. (3) Crosslisted as ECGR 5142. Prerequisite: ECGR 4142 or permission of the Department. Characteristics of power generation units, steam, nuclear reactor and hydroelectric. Economic and thermal system dispatch. Transmission losses, load flow problems. Hydro scheduling, hydro-plant models. Energy production cost models. Interchange evaluation.

ECGR 4191. Dynamic and Transient Analysis of Power Systems. (3) Crosslisted as ECGR 5143. Prerequisite: ECGR 4142 or permission of Department. Large-scale systems state descriptions and hierarchical control. State space models, dynamic stability and testing. Stability of simple and multi-machine systems. Transient phenomena in electrical power systems. Transient stability problem.

ECGR 4193. Experiments in Modern Optical Engineering. (3) Prerequisites ECGR 4125/5125 and ECGR 4165/5165 or permission of department. This course offers lectures and laboratory experiments in lasers, optical fiber, optical sensing, and optical signal processing. This course is offered as supplement to ECGR 4125/5125 and ECGR 4165/5165 with emphasis on hands on experiments, measurements, and design.

ECGR 4222. Random Processes and Optimum Filtering. (3) Crosslisted as ECGR 5122. Prerequisites: ECGR 3111 and STAT 3128 or permission of Department. Review of probability, univariate and multivariate distribution functions; random processes, discrete and continuous time processes, widesense stationary, ergodicity; time- and frequency-domain analysis; linear systems, optimum filtering, Wiener filters, Kalman filters; application . *(On demand)*

ECGR 4231. Sensors & Actuators. (3) Crosslisted as ECGR 5231. Prerequisite: ECGR 3132, 3121, or permission of Department. Fundamentals of sensors and actuators, and their applications in smart machines, industry, metrology, and the environment. Materials for sensors, actuators, electronic and optical sensors, electroptics, magneto-optics, and fiber optics sensors, microsensors and actuators, sensors and actuators, signal processing and interfaces.

ECGR 4261. Microwave Circuit Design I. (3) Crosslisted as ECGR 5261. Prerequisites: ECGR 3131; and senior/graduate standing, or permission of Department. Design and analysis of microwave devices and circuits; including microwave aspects of discrete active (i.e., field effect and bipolar transistors, etc.) and passive (i.e., microstrips, inductors, capacitors) components; device parameter extraction, using computer aided design (CAD) tools.

ECGR 4265. Microwave Devices and Electronics. (3) Crosslisted as ECGR 5265. Prerequisites: ECGR 3122 and PHYS 2231 with grades of *C* or better or permission of Department. Microwave transmission line theory, parameters, microwave waveguides, microstrip line and

components including resonators, slow-wave structures, tees, rings, couplers, circulators, isolators, and microwave tubes. Microwave solid state electronics, including microwave transistors, tunnel diodes, transferred electron devices, avalanche transit-time devices, and mono-lattice microwave integrated circuits.

ECGR 4422. Random Processes and Optimum Filtering. (3) Crosslisted as ECGR 5122. Prerequisites: ECGR 3111 and STAT 3228 or permission of Department. Review of probability, univariate and multivariate distribution functions; random processes, discrete and continuous time precesses, widesense stationary, ergodicity; time-and frequency-domain analysis; linear systems, optimum filtering, Wiener filters, Kalman filters; application.

ECGR 4433. VLSI Systems Design. (3) Same as ECGR 5133. Prerequisite: ECGR 3131 and 3181, both with a grade of C or better or permission of the Department. Analysis, design, and synthesis of very large scale integrated circuits. A project-oriented course relying heavily on computer-aided design tools for logic, layout design, and simulation.

ECGR 4892. Individualized Study. (1-6) Crosslisted as ECGR 5892. Individual investigation and exposition of results. May be repeated for credit.

ECONOMICS (ECON)

ECON 1090. Topics in Economics. (1-3) Consideration of topics from the areas of economic theory, economic development, consumer economics, welfare economics, and current economic problems. May be repeated for credit as topics vary. (*On demand*)

ECON 1101. Economics for Non-Majors. (3) Economic issues without emphasis on theoretical models. Contemporary economic issues such as pollution control, health care, unemployment, and crime are studied. A student is ineligible to take this course if credit has already been received for either ECON 2101 or ECON 2102. (*Fall, Spring, Summer*)

ECON 2101. Principles of Economics-Macro. (3) Scope and methodology of economics as a social science, the measurement of national income, the theory of national income determination, money and banking, monetary and fiscal policy, and international economics. *(Fall, Spring, Summer) (Evenings)*

ECON 2102. Principles of Economics-Micro. (3) Pricing mechanism of a market economy, the industrial organization of the U.S. economy, problems of economic concentration, the theory of income distribution, and comparative economic systems. *(Fall, Spring, Summer) (Evenings)*

ECON 3090. Topics in Economics. (3) Prerequisite: Permission of the department. Topics from the areas of economic theory, economic development, consumer economics, welfare economics, and current economic problems. May be repeated for credit. (*On demand)*

ECON 3105. Industrial Relations. (3) Prerequisite: introductory course in economics or permission of instructor. Systematic analysis of the sociological, economic, and legal forces affecting the work environment. Emphasis on labor unions and employment law. (*On demand)*

ECON 3106. Labor Economics. (3) Prerequisites: ECON 2101 and 2102. Economics of labor markets with emphasis on wage and employment theory, collective bargaining, and human capital theory. Historical and legal forces affecting labor markets. (*On demand)*

ECON 3107. Employment Law. (3) Crosslisted as MGMT 3243. Legal principles and legislation which control employment decisions in union and non-union settings. Topics include fair employment practices, anti-discrimination law, representation elections, unfair labor practices, and dispute settlement processes. (*On demand)*

ECON 3112. Econometrics. (3) Prerequisites: ECON 2101 and 2102, MATH 1120 or 1241, STAT 1220 and INFO 2130. Econometric techniques, including simple and multiple least squares regression with problems and analyses. (*Fall, Summer)*

ECON 3114. Research Methods. (3) Prerequisites: STAT 1220, INFO 2130, and ECON 3112. Introduction to research in economics, including major sources of data and information and application of elementary research methods to economic problems. (*On demand)*

ECON 3115. Money and Banking. (3) Prerequisite: ECON 2101. The characteristics and functions of money in the modern economy, monetary theory and policy, and financial institutions. (*On demand)*

ECON 3122. Intermediate Microeconomics. (3) Prerequisites: ECON 2101 and 2102 and MATH 1120 or 1241. Microeconomic analysis with emphasis on consumer theory and the theory of production. Resource allocation and the determination of optimum output and pricing by a firm operating under various market structures. Distribution and welfare theories. (*Fall*)

ECON 3123. Intermediate Macroeconomics. (3) Prerequisites: ECON 2101 and 2102 and MATH 1120 or 1241. Analysis of economic aggregates with inflation, unemployment, and income determination. Keynesian, Classical, Monetarist, and supply side models. (*Spring)*

ECON 3125. Managerial Economics. (3) Prerequisites: ECON 2102, MATH 1120 or 1241, STAT 1220, and INFO 2130. Economic decisions of particular interest to business firms, e.g., demand theory and forecasting; cost analysis and pricing policies. (*Fall, Spring, Summer) (Evenings)*

ECON 3131. Economic History of the United States. (3) Prerequisite: ECON 1101 or 2101 or 2102. Use of economic models to further understanding of the growth

and development of the U.S. economy from colonial times to the Great Depression. Emphasis on the sources and consequences of American growth, with particular emphasis on technological, demographic, and institutional changes. (*On demand)*

ECON 3141. Health Economics. (3) Prerequisite ECON 2102. The application of microeconomic concepts to markets for health/medical care, including issues such as health care delivery, financing, regulation, and costs. *(On demand)*

ECON 3151. Law and Economics. (3) Prerequisite: ECON 2102. The application of microeconomic concepts to the law with an emphasis on examining the impact of laws on resource use, with the goal of using resources efficiently. The emphasis will be on property, contract, tort, and criminal law. *(On demand)*

ECON 3171. International Business Economics. (3) Prerequisite: ECON 2101 and 2102. Survey of international trade and international monetary theory including determination of international trade patterns, welfare implications of international trade and trade restrictions, economic integration, exchange rate determination, and the balance of payments. Credit will not be given for ECON 3171 where credit has already been given for ECON 4171 or 4172. (*On demand*)

ECON 3400. Economic Internship. (1-3) Prerequisites: Open to junior and senior Economics majors in good standing. Requires 50 hours of supervised employment per hour of credit and the completion of an academic project. Students must consult the Department Chair in advance of registration to discuss the availability of positions. A proposal form must be completed and approved prior to registration and the commencement of the work experience. Offered on a *Pass/No Credit basis*. Cannot be taken for credit at the same time or following any other internship for credit and cannot be repeated. *(Fall, Spring, Summer)*

ECON 3500. Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the Department's Cooperative Education and 49ership students during each semester they are working in the position. Restricted to majors in the Department of Economics. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (*Fall, Spring, Summer)*

ECON 3895. Directed Individual Study. (1-3) Prerequisites: permission of the instructor and the Department. Independent study of a theoretical and/or a policy problem in a special area of economics. Students may pursue a particular program in depth. Topics of the investigation may originate from the student or from the faculty member supervising the study. May be repeated for credit. (*Fall, Spring, Summer) (Evenings)*

ECON 4100. Mathematical Economics. (3) Prerequisites: ECON 2101 and 2102 and MATH 1120 or 1241. Both microeconomic and macroeconomic problems are analyzed with quantitative techniques. Emphasis is given to the study of methods for mathematically formulating economic relationships including the tools used for finding maximums, minimums, and limits to single, recursive, and simultaneous economic relationships. Not available for credit in the M.S. program in Economics. (*On demand)*

ECON 4112. Econometrics II. (3) Crosslisted as ECON 6112. Prerequisite: ECON 3112 or permission of instructor. Tools of analysis are more extensive and of a greater depth than those studied in ECON 3112. Regression and correlation techniques are applied to economic and business problems derived from government and business environments. Not available for credit in the M.S. program in Economics. (*On demand)*

ECON 4116. Public Finance. (3) Prerequisite: ECON 3122. Revenue and expenditure problems of governmental units, intergovernmental financial relationships and the impact of federal fiscal policy upon the American economy. (*On demand)*

ECON 4117. Business and Economic Forecasting. (3) Prerequisite: ECON 3112. Analysis of fluctuations in economic activity, including production, employment, prices and industry sales. Topics include forecasting methods, business cycle theories, historical record, industry and sales forecasting. Not available for credit in the M.S. program in Economics. (*On demand)*

ECON 4135. Economics of Growth and Development. (3) Prerequisite: ECON 2102. Theories of economic growth and development applied to varying economic and social systems. Emphasis on current theoretical models of technological innovation and growth. (*On demand)*

ECON 4150. Urban and Regional Economics. (3) Prerequisite: ECON 2102. Spatial and economic organization of cities and regional areas and their special economic problems. Topics include economic growth, urban location and land use, poverty, housing, public finance, and urban transportation. (*On demand)*

ECON 4160. Economics of Transportation. (3) Prerequisite: ECON 2102. Analysis of transportation systems. Topics include the historical development of various modes, costs and rate-making, regulation and national transportation policy. (*On demand)*

ECON 4171. Economics of International Trade. (3) Prerequisite: ECON 3122, or ECON 3171 and ECON 2102, or permission from the instructor. Theory of international trade, including determination of international trade patterns, welfare implications of international trade, economic integration, and effects of tariffs and quotas. (*On demand*)

ECON 4172. Economics of International Finance. (3) Prerequisite: ECON 3123, or ECON 3171 and ECON 2102, or permission from the instructor. Survey of international monetary theory. Topics include exchange rate determination, balance of payments and adjustment, international liquidity, capital movements, international financial organizations, and monetary reform proposals. (*On demand)*

ECON 4177: History of Economic Thought. (3) (W) Prerequisites: ECON 3122 and ECON 3123. One of the two courses may be taken as a corequisite. History of economics as a science and the evolution of theories of value, distribution and employment. Review of the works of Adam Smith, Thomas Malthus, David Ricardo, Karl Marx, Alfred Marshall, Thorstein Veblen, and John Maynard Keynes. *(Spring)*

ECON 4180. Industrial Organization and Public Policy. (3) Prerequisite: ECON 3122. An examination of monopolistic competition, oligopoly, and monopoly and questions of public policy in dealing with problems created by industrial concentration. *(Spring, Summer)*

ECON 4181. Energy and Environmental Economics. (3) Prerequisite: ECON 2102. Economic issues of both energy and environment. Energy issues include the historical development of energy resources, supply and demand considerations and projections of the future energy balance. Environmental issues are externalities, common property resources, and government regulation. Policy considerations include environmental standards, pollution charges, and property rights. Cost-benefit analysis and microeconomic theory are applied. (*On demand)*

EDUCATION (EDUC)

EDUC 2100. Introduction to Education and Diversity in Schools. (3) Social, historical, and philosophical foundations of the educating professions, the organization and various levels of education, and the major issues in American education. Field-based activities in observing in-class and non-classroom settings: 5 hours. *(Fall, Spring, Summer)*

EDUC 2150. Human Development Across the Life Span. (3) Biological, psychological and social development throughout the life span. *(Once a year)*

EDUC 3600. Teaching Fellows Seminar. (1) Prerequisite: Membership in good standing in the North Carolina Teaching Fellows Program. A discussion-oriented course in contemporary school issues led by the program's faculty sponsors to cover Teaching Fellows Program expectations and prepare students to participate in required school, community, campus, and other enrichment activities. May be repeated for credit. *(Fall, Spring)*

EDUC 4290. Modifying Instruction for Learners with Diverse Needs. (3) Prerequisite: admission to Teacher Education. Corequisite: enrollment in methods course(s) with field experience requirement. Strategies for adapting standard instruction to meet the learning needs of all members of elementary, middle, or secondary classrooms, including students at risk for school failure, individuals from culturally and linguistically diverse backgrounds, gifted learners, and students with disabilities. *(Fall, Spring, Summer)*

EDUCATION INSTRUCTIONAL SYSTEMS TECHNOLOGY (EIST)

EIST 4100. Computer Applications in Education. (3) Computer systems and software for enhancing teaching, learning, and educational management; evaluating, selecting, and integrating courseware; focus on current PC operating system, word processing, database, spreadsheet, presentation, Internet, e-mail, and multimedia software. *(Fall, Spring, Summer)*

EIST 4135. Audiovisual Communications. (3) Prerequisite: Junior standing or departmental approval. Overview of traditional and emerging audiovisual media for education, training, marketing, and public relations, emphasizing knowledge and skills for evaluating, designing, producing, and using media such as photography, television, displays, interactive video, and microcomputers to enhance communication. *(On demand)*

EIST 4140. Educational Television. (3) Prerequisite: Junior standing or departmental approval. An examination of traditional and emerging applications of telecommunications media for teaching, training and informing. Investigation of published research and current strategies for evaluating the social and educational impact of television. Students will evaluate, design, produce, and utilize telecommunications media in micro-teaching settings for the enhancement of communication in their respective disciplines. *(On demand)*

ELEMENTARY EDUCATION (ELED)

ELED 3110. Instructional Design and the Use of Technology with Elementary School Learners. (3). Prerequisite: Admission to Teacher Education. Introduction to setting goals and objectives for instruction, various formats of lesson design, alignment between instructional objectives, activities, and assessments and the related use of technology in the development of effective and systematic learning environments; focused on current PC operating system, word processing, spreadsheet, presentation package, database, email, web browser, multimedia tools, and the Internet. *(Fall, Spring, Summer)*

ELED 3120. The Elementary School Child. (3) Prerequisite: Admission to Teacher Education. Child development theories and research findings, conceptual relationships between education and developmental paradigms, pathways of individual student development,

child-centered and other types of educational reforms, the concept of developmental "needs" and the roles and responsibilities of school staff for meeting children's developmental needs. Includes approximately 10 hours of field activities. *(Fall, Spring)*

ELED 3221. Teaching Science to Elementary School Learners. (3) Prerequisite: Admission to Teacher Education. Teaching strategies and materials appropriate for teaching inquiry science in grades K-6 with emphasis on using science process skills and content to develop effective science learning experiences for elementary school children. Includes 10 hours of field experiences. *(Fall, Spring)*

ELED 3223. Teaching Social Studies to Elementary School Learners. (3) Prerequisite: Admission to Teacher Education. Teaching strategies and materials for social studies in grades K-6 with emphasis on using social science content to develop effective social studies instructional plans for elementary school children. Includes 10 hours of field experiences in a classroom setting. *(Fall, Spring)*

ELED 3226. Teaching Language Arts to Elementary School Learners. (3) (W) Prerequisite: Admission to Teacher Education. Teaching of language arts in grades K-6, including how the study of language acquisition and growth informs and guides instructional practice. Emphasis on methods for fostering growth in speaking, listening, writing, and reading across the curriculum. Includes 10 hours of field experiences. *(Fall, Spring)*

ELED 3800. Individual Study in Elementary Education. (1-6) Prerequisite: Permission of the student's advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. *(Fall, Spring, Summer)*

ELED 4121. Measuring and Evaluating Learning in the Elementary School Curriculum. (3) Prerequisite: Admission to Teacher Education. Planning for K-6 classroom measurement and evaluation based on objectives with emphasis on writing cognitive, affective, and psychomotor outcomes using an accepted system, and the development of teacher-made tests and other types of classroom assessment, including objectives, essay, oral, performance, and portfolio evaluation. Includes 5 hours of field experiences. *(Fall, Spring, Summer)*

ELED 4122. Research and Analysis of Teaching Elementary School Learners. (3) Prerequisite: Admission to Teacher Education. Concepts, methods, and practices used by effective teachers in their daily K-6 classroom routines with emphasis on classroom management and organization. Approximately 10 hours of field experience. *(Fall, Spring, Summer)*

ELED 4220. Integrating Curriculum for Elementary School Learners. (3) Prerequisite: Admission to Teacher Education. Curriculum planning and development skills with emphasis on relating school content and skills to societal and individual needs, designing and implementing integrated activities, and attending to the nature and functions of elementary schools. Includes 12 hours of field experiences. *(Fall, Spring)*

ELED 4255. CAMMP: Computer Applications and Manipulative Mathematics Programs. (3) Prerequisite: Admission to Teacher Education and permission of instructor. Examination of constructivism in K-8 mathematics teaching, with emphasis on concrete, representational and symbolic manipulatives; developmentally appropriate computer software. *(Summer)*

ELED 4420. Student Teaching/Seminar: K-6 Elementary Education. (15) (O) Prerequisites: Completion of all other course work and approved Application for Student Teaching. Planned sequence of experiences in the student's area of specialization conducted in an approved school setting under supervision and coordination of a University supervisor and a cooperating teacher. Students must demonstrate the competencies identified for their specific teaching field in an appropriate grade-level setting. Approximately 35 to 40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

ENGLISH (ENGL)

ENGL 1101/1102 or ENGL 1103 or their equivalents are prerequisites for all English courses at the 2000 level or above.

ENGL 1100. English as a Foreign Language. (3) Limited to students whose native language is not English who may need additional preparation before beginning the required first-year English composition courses. Does not count toward an English major or toward the General Education requirement. One may not register for ENGL 1100 before taking the English Department's placement test for persons whose primary language is not English. (*Fall, Spring*)

ENGL 1101. English Composition. (3) Extensive practice in and discussion of composition in various forms, for different purposes, and for various audiences. Students experience writing as a means of personal growth, intellectual development, and communication. (*Fall, Spring, Summer) (Evenings*)

ENGL 1102. Writing in the Academic Community. (3) Prerequisite: ENGL 1101. Writing argumentation appropriate to inquiry in an intellectual community. *(Fall, Spring, Summer) (Evenings)*

ENGL 1103. Accelerated College Writing and Rhetoric. (3) Prerequisite: Placement by the English Department. Accelerated writing curriculum that fulfills the requirement for ENGL 1101 and 1102. *(Fall)*

ENGL 2014. Topics in Writing. (1-3) (W) Offers instruction and practice in special types of writing, such as research or legal writing, that are not included in other writing courses. In addition, some sections may be

designed for students who need strengthening of composition skills, or may offer instruction in various aspects of effective writing. ENGL 2014 *may not be used* toward the requirements for the English major. The *maximum hours of credit* allowed are six for ENGL 2014 or 2015, or for 2014 and 2015 together. (*On demand*)

ENGL 2015. Topics in Writing. (1-3) (W) Offers instruction and practice in special types of writing, such as writing for publication (exclusive of poetry, drama, and fiction), which are not included in other writing courses. In addition, some sections may offer instruction in various aspects of effective writing. *Not more than* three hours of 2015 may be used toward the requirements for the English major (and those three hours may not be used toward fulfillment of the 12 hours of English language or composition required for licensure in English). The *maximum hours of credit* allowed for any student are six for ENGL 2015 or 2014, or for 2015 and 2014 together. (*On demand*)

ENGL 2050. Topics in English. (3) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English Department. Does not count toward the English major. (*Yearly*)

ENGL 2090. Topics in English. (3) Special topics not included in other courses. May be repeated for credit as topics vary. Does not fulfill general education writing goal. *(On demand)*

ENGL 2091. Topics in English – Writing Intensive. (3) (W) Special topics not included in other courses. May be repeated for credit as topics vary. Fulfills general education writing goal. *(On demand)*

ENGL 2100. Writing About Literature. (3) Combined practice in writing and study of literature, emphasizing writing processes including revision. Must be completed before ENGL 3100 and other English coursework. Restricted to English majors and minors and Education majors. *(Fall, Spring, Summer)*

ENGL 2101. Masterpieces of British Literature I. (3) An introduction to British Literature written before 1800. The course also provides backgrounds in the society and culture of the Middle Ages, the Renaissance, and the Age of Reason. *(On demand)*

ENGL 2102. Masterpieces of British Literature II. (3) An introduction to masterpieces of British Literature written since 1800. The course also provides backgrounds in the society and culture of the Romantic, Victorian, and Modern periods. *(On demand)*

ENGL 2103. Masterpieces of Modern Fiction. (3) Readings in selected novels and short stories written since 1850. *(On demand)*

ENGL 2104. Major American Writers. (3) Introductory readings in six to eight authors, approximately half from the 19th century and half from the 20th century, both poetry and prose. *(On demand)*

ENGL 2105. Introduction to Poetry. (3) (W) Representative poems and poets, drawn from several literary periods that introduce students to several poetic genres, to varied treatments of universal themes (such as love, death, disappointment, joy), and to various ideas about poetic imaginations. *(Yearly)*

ENGL 2106. Film Criticism. (3) Introduction to film as an art form. Emphasis will be on the critical analysis of the form and the content of films with attention to issues of visual narrative, audience, cinematography, editing, acting, etc. *(On demand)*

ENGL 2108. Introduction to Drama. (3) (W) Representative plays of the western world from the classical period to the modern period to introduce students to drama as literature, with consideration of staging, conventions of the theater, types of drama, and dramatic theory. *(On demand)*

ENGL 2116. Introduction to Technical Communication. (3) (W) Technical Communication theory (such as organization, audience analysis, and editing) is taught in the context of oral and written formats, such as memoranda, proposals, reports, PowerPoint presentations, and includes formats and content common to students' own disciplines. (*Fall, Spring, Summer) (Evenings)*

ENGL 2126. Introduction to Creative Writing. (3) (W) This course introduces students to creative writing, including both poetry and fiction writing, assuming little or no previous creative writing experience. (*Fall, Spring, Summer*)

ENGL 2127. Introduction to Poetry Writing. (3) An introductory course for those with little experience in reading, writing, and critiquing poetry. Students will read and discuss poetry in an anthology and also be responsible for writing poems based on assigned formal strategies or themes and for bringing them to a workshop setting for group critique. *(On demand)*

ENGL 2128. Introduction to Fiction Writing. (3) An introductory course for those with little experience in reading, writing, and critiquing fiction. Students will read and discuss short stories in an anthology and also be responsible for writing stories based on assigned formal strategies or themes and bringing them to a workshop setting for group critique. *(On demand)*

ENGL 2301. Introduction to African-American Literature. (3) Crosslisted as AFRS 2301. Prerequisites: ENGL 1101 and 1102 or 1103, or departmental permission. Survey of the major periods, texts, and issues in African-American literature. Prerequisite to 4000 level African-American literature courses in English Department. *(Fall, Spring)*

ENGL 3050. Topics in English. (3) Special topics not included in other courses. May be repeated for credit as topics vary. Does not fulfill general education writing goal. *(On demand)*

ENGL 3051. Topics in English – Writing Intensive. (3) (W) Special topics not included in other courses. May be repeated for credit as topics vary. Fulfills general education writing goal. *(On demand)*

ENGL 3100. Approaches to Literature. (3) (W) Introductory study and application of major critical approaches to literature, such as historical, psychological, mythological, and formalistic. Required of English major and minor. (*Fall, Spring, Summer) (Evenings)*

ENGL 3102. Literature for Young Children. (3) Critical study of literature for children under the age of eight, covering such topics as picture books, nursery rhymes, and books for beginning readers. *(Spring)*

ENGL 3103. Children's Literature. (3) Critical study of various genres of children's literature, such as realistic fiction, fantasy, and picture books. *(Fall, Spring)*

ENGL 3104. Literature for Adolescents (3) Critical study of literature intended for adolescent and pre-adolescent readers, as well as texts that deal with coming-of-age themes. *(Fall, Spring)*

ENGL 3110. Literature and Science. (3) (W) The works of scientists (such as Darwin, Freud, or Einstein) and their influence on literature studied along with the role of creativity, imagination, and communication in literature and science. *(On demand)*

ENGL 3132. Introduction to Contemporary American English. (3) Introduction to the study of word formation, the sound system, and the structure of contemporary American English, including characteristics and applications of traditional grammar. *(Fall, Spring)*

ENGL 3140. Colonial and Early American Literature. (3) Origins of American literature, from Colonial times to Washington Irving, including such authors as Edwards, Taylor, Franklin, Crevecoeur, Freneau, Brown. (*Alternate years*)

ENGL 3141. American Literature of the Romantic Period, 1820-1870. (3) Important writers and ideas of the period of American romanticism, from Irving through Whitman, including such authors as Poe, Emerson, Thoreau, Hawthorne, Melville. (*Yearly*)

ENGL 3142. American Literature of the Realistic and Naturalistic Periods, 1870-1920. (3) Important writers and ideas of American literature from Whitman through the period of World War I, including such authors as Dickinson, Twain, Howells, James, Crane, Dreiser, Frost. (*Yearly*)

ENGL 3143. Modern American Literature, 1920 to Present. (3) Important writers and ideas of modern American literature, including such authors as Faulkner, Eliot, Hemingway, Cummings. (*On demand*)

ENGL 3156. Native American Indian Literature. (3) Introduction to American Indian Literature, ranging from oral traditions through contemporary writers. (*On demand*)

ENGL 3300. American Literature Survey. (3) This course surveys the whole of American literature from the Colonial to the Modern period. Major authors and literary movements, as well as important ideas and cultural issues will be addressed. Required of English majors. *(Fall, Spring, Summer, Evenings)*

ENGL 3301. British Literature Survey I. (3) This course surveys British literature from the Medieval period to the Renaissance. Major authors and literary movements as well as important ideas and cultural issues will be addressed. Required of English majors. *(Fall, Spring, Summer, Evenings)*

ENGL 3302. British Literature Survey II. (3) This course surveys British literature from the Neoclassical to the Modern period. Major authors and literary movements, as well as important ideas and cultural issues will be addressed. Required of English majors. *(Fall, Spring, Summer, Evenings)*

ENGL 3852. Independent Study. (1-3) Prerequisite: Permission of the department. Individual investigations and appropriate exposition of the results. (Unless special permission is granted by the Department Chair, no more than six hours of 3852 may apply toward the English major.) *(Fall, Spring, Summer)*

ENGL 4002. Women and Literature. (3) Selected topics focusing on women and literature, such as images of women, women as writers, and women as literary critics. With permission of the English Department, may be repeated for credit as topics vary. (However, only six hours may be used for the requirements for the English major.) (*On demand*)

ENGL 4008. Topics in Advanced Technical Communication. (3) Prerequisites: ENGL 2116 and COMM 1101. Exploration, both theoretically and practically, of the interrelation of written, oral, graphic, and digital communication within technical rhetorical contexts. May be repeated once for additional credit with the approval of the English Department. (*On demand*)

ENGL 4050. Topics in English. (3) Special topics not included in other courses. May be repeated for credit as topics vary. Does not fulfill general education writing goal. *(On demand)*

ENGL 4051. Topics in English – Writing Intensive. (3) (W) Special topics not included in other courses. May be repeated for credit as topics vary. Fulfills general education writing goal. *(On demand)*

ENGL 4090. Major Authors. (3) The works, ideas, and life of one to three significant authors. With permission of the English Department, may be repeated once for credit as long as different authors are considered. *(On demand)*

ENGL 4102. Classics in British Children's Literature. (3) Prerequisite: ENGL 3102 or 3103 or 3104, or departmental permission. Focuses on pivotal works in the history of British and British Colonial Children's literature. *(Fall)*

ENGL 4103. Classics in American Children's Literature. (3) Prerequisite: ENGL 3102 or 3103 or 3104, or departmental permission. Focuses on pivotal works in the history of American Children's literature. *(Spring)*

ENGL 4104. Multiculturalism and Children's Literature. (3) Prerequisite: ENGL 3102 or 3103 or 3104, or departmental permission. Focuses on works that represent one or more kinds of cultural, ethnic, or social diversity of the United States and other national literatures. *(Fall)*

ENGL 4111. Ancient World Literature I (3) Readings of ancient world literature, in English translation. *(On demand)*

ENGL 4112. Modern World Literature. (3) Readings in modern world literature, in English and in English translation. *(On demand)*

ENGL 4114. Milton. (3) A study of the major poems and selections from the minor works of Milton. *(On demand)*

ENGL 4116. Shakespeare's Early Plays. (3) A study of 10 representative plays from the comedies, histories, and tragedies written 1590-1600. (*Yearly*)

ENGL 4117. Shakespeare's Late Plays. (3) A study of 10 representative plays from the period 1600-1611, including the late tragedies and tragi-comedies. (*Yearly*)

ENGL 4118. British Renaissance Literature. (3) Readings of prose, poetry, and/or drama from the Renaissance period in England (16th and 17th centuries), which may include works by men and women writers such as Shakespeare, Milton, Donne, Lanyer, Wroth, and others. *(On demand)*

ENGL 4120. Romantic British Literature, 1785-1832. (3) Literature from the Romantic period, with emphasis on the works of specific writers, which may include works by men and women writers such as Wordsworth, Blake, Coleridge, Wollstonecraft, Austen, and Smith. *(On demand)*

ENGL 4121. British Literature of the Restoration and 18th Century. (3) Representative poetry, prose, and/or drama from this period in British literary history, which may include works by men and women writers such as Pope, Dryden, Sheridan, Behn, Centlivre, and others. *(On demand)*

ENGL 4122. British Victorian Literature (3) Readings in British literature during the Victorian period in England. Texts studied may include selections from poetry, prose, and/or drama and men and women writers such as Dickens, Browning, Tennyson, Bronte, Eliot, and Wilde. *(On demand)*

ENGL 4123. Modern British Literature. (3) Representative British literary texts (poetry, prose, and/or drama) that embody the cultural and literary developments of the 20th century. (*On demand*)

ENGL 4132. British Drama to 1642, Excluding Shakespeare. (3) A survey of late-medieval and Renaissance drama in England. (*On demand*)

ENGL 4143. The American Novel of the 19th Century. (3) Major novelists and traditions from the beginnings of the American novel through the rise of realism, including such novelists as Hawthorne, Melville, Twain, Howells, James. (*Alternate years*)

ENGL 4144. The American Novel of the 20th Century. (3) Major novelists and traditions from the emergence of naturalism to the present, including such novelists as Crane, Dreiser, Hemingway, Faulkner. (*Yearly*)

ENGL 4145. Literature of the American South. (3) Selected works of Southern writers that reflect literary and cultural concerns from Colonial times to the present, including such authors as Poe, the early humorists, local color writers, Chopin, Faulkner, Warren, O'Connor, Welty. (*Yearly*)

ENGL 4146. Contemporary Jewish-American Literature. (3) An introduction to the scope and shape of the contemporary Jewish-American literary tradition. Such writers as Bellow, Malamud, Roth, Singer, and Potok will be studied. (*On demand*)

ENGL 4147. Early Black American Literature. (3) Prerequisite: ENGL 2301. A survey of significant writings by Black Americans before the Harlem Renaissance. (*Alternate years*)

ENGL 4148. Twentieth-Century Black American Literature: Prose. (3) Prerequisite: ENGL 2301. Intensive study of selected black American 20th-century writers of fiction and nonfiction, beginning with the Harlem Renaissance. (*Alternate years*)

ENGL 4150. Contemporary Poetry. (3) Poetry in English (including translations) since 1940. (*On demand*)

ENGL 4151. Modern Drama. (3) Representative Continental, British, and American plays, from Shaw to the present. (*Alternate years*)

ENGL 4152. Modern European Literature. (3) Selected modern European authors, translated into English, whose works have been of special interest to readers and writers of British and American literature. *(On demand)*

ENGL 4153. Contemporary Fiction. (3) Selected present-day fiction, with an emphasis upon works from outside the United States and Britain. Works not originally in English will be studied in translation. *(On demand)*

ENGL 4155. Pan-African Literature. (3) Introduction to significant Pan-African literature, emphasizing the oral tradition, selected works of major authors in the

Caribbean and Africa, and the relationships of these traditions to American, British and other literary traditions. Works not originally written in English will be studied in translation. (*On demand*)

ENGL 4156. Gender and African-American Literature. (3) Crosslisted as AFRS 4106. Prerequisites: ENGL 2100 and 2301, or permission of instructor. Exploration of the intersection of gender and African-American literature, focusing on either Black women writers or Black male writers, or a combination in dialogue. *(Alternate years)*

ENGL 4157. African-American Poetry. (3) Crosslisted as AFRS 4107. Prerequisites: ENGL 2100 and 2301 or permission of instructor. Intensive study of African-American poetry, focusing on one period or traversing several. *(Alternate years)*

ENGL 4158. African-American Literary Theory and Criticism. (3) Crosslisted as AFRS 4108. Prerequisites: ENGL 2100 and 2301, or permission of instructor. History of an African-American approach to literary analysis, including a practicum in modern criticism. *(Alternate years)*

ENGL 4161. Modern English Grammar. (3) A study of the structure of contemporary English, with an emphasis on descriptive approaches. (*On demand*)

ENGL 4165. Language and Culture. (3) Readings in and discussion and application of the interrelationships between language and culture, including basic introduction to contemporary American dialects and to social contexts of language. (*Yearly*)

ENGL 4167. The Mind and Language. (3) Introduction to the study of the mind from a linguistic perspective. Topics include language growth and loss, language deficits, modularity and hierarchical processing, the interaction of cognitive and linguistic faculties, parsing/processing strategies and limitations, and applications such as therapy, forensics, computing, teaching. *(Alternate years)*

ENGL 4180. Theories of Technical Communication. (3) Prerequisite: ENGL 2116. Rhetorical, psychological, and anthropological theories that underscore the interrelations of written, graphic, and digital communication within technical, rhetorical contexts. *(Fall)*

ENGL 4181. Writing and Designing User Documents. (3) Prerequisite: ENGL 2116. Researching and analyzing audiences to write publishable instructions. This includes the production, testing, and revision of tutorials, reference manuals, on-line documents, and digital media for users of computers and other technologies. *(Spring)*

ENGL 4182. Information Design and Digital Publishing. (3) Prerequisite: ENGL 2116. Theoretical and practical exploration of visual communication. By rhetorically integrating textand graphics, students will write and publish documents and online content for digital environments. *(Fall)*

ENGL 4183. Editing Technical Documents. (3) Prerequisite: ENGL 2116. Substantive editing, copyediting, project management, and editing in hardcopy documents and web and digital environments. *(Spring)*

ENGL 4202. Writing Poetry. (3) Prerequisite: ENGL 2126 or 2127, or permission of instructor. Further study of and practice in the writing of poetry within a workshop format. May be repeated once for credit with the permission of the English Department. (*Fall, Spring) (Evenings*)

ENGL 4203. Writing Fiction. (3) Prerequisite: ENGL 2126 or 2128, or permission of instructor. This course provides further study of and practice in the writing of fiction within a workshop format. May be repeated once for credit with the permission of the English Department. (*Fall, Spring) (Evenings*)

ENGL 4204. Expository Writing. (3) (W) Writing of essays, criticism, and various forms of exposition. (*Fall, Spring) (Evenings*)

ENGL 4208. Poetry Writing Workshop. (3) Prerequisite: ENGL 4202. Designed for advanced writers of poetry. Focuses primarily on student work and peer criticism of it. May be repeated once for credit with permission of Department. (*Yearly*)

ENGL 4209. Fiction Writing Workshop. (3) Prerequisite: ENGL 4203. Designed for advanced writers of fiction. Focuses primarily on student work and peer criticism of it. May be repeated once for credit with permission of Department. (*Yearly)*

ENGL 4211. Chaucer and Medieval Literature. (3) . Readings that focus on the works of Chaucer, including *The Canterbury Tales,* and other works from the medieval period in England, which may include *Troilus and Crisedye* and various dramatic texts. (*On demand*)

ENGL 4254. Teaching English/Communication Skills to Middle and Secondary School Learners. (3) Approaches to the teaching of English, including recent theories and research related to writing and literary study, with special attention to technology. Designed primarily for teaching in grades 6-12. *(Fall, Spring)*

ENGL 4260. History of the English Language. (3) Origins and development of the English language, both spoken and written, from its earliest forms to contemporary usage. (*Yearly*)

ENGL 4263. Linguistics and Language Learning. (3) Readings in, discussions of, and application of linguistically oriented theories of language acquisition, directed toward gaining an understanding of language-learning processes and stages. (*Alternate years*)

ENGL 4290. Advanced Creative Project. (3) Prerequisite: ENGL 4208 or 4209, or permission of the instructor. The planning, writing, and polishing of a work of at least 20 pages of poetry or at least 40 pages of fiction or creative non-fiction by advanced undergraduate or graduate students with the guidance of a member of the Department's creative writing faculty. The final work may be a single piece or a collection of pieces and will evolve under the supervision of the primary instructor. With permission of the Department, students who took the course as undergraduates may repeat as graduate students. (*On demand*)

ENGL 4400. English Composition Practicum. (1-3) (W) Prerequisite: Permission of the instructor. Through supervised tutorial experience and seminars, this course introduces the student to current developments concerning composition and to a variety of methods for teaching English composition. This course is highly recommended for those planning to teach or those currently engaged in teaching. With permission of the English Department may be repeated once for credit. (*Fall*)

ENGL 4410. Professional Internship. (3 or 6) Prerequisites: Permission of English Internship Coordinator. Restricted to juniors and seniors majoring or minoring in English or minoring in Technical/Professional Writing, who have at least a 2.5 GPA and have had a course in professional communication (e.g. journalism, technical communication, public relations, public relations lab, or mass media). Students work 8-10 hours (3 hours credit) or 16-20 hours (6 hours credit) per week in a placement arranged by the Internship Coordinator. May be repeated once for credit: only three credit hours may be applied to the English major; three additional hours may be counted as a University elective. (*Fall, Spring, Summer*)

ENGL 4852. Independent Study. (1-3) Prerequisite: Permission of Department. Individual investigations and appropriate exposition of the results. (Unless special permission is granted by the Department Chair, no more than six hours may apply toward the English major.) May be repeated for additional credit with approval of the English Department. (*Fall, Spring, Summer*)

ENGINEERING (ENGR)

ENGR 1201. Introduction to Engineering Practices and Principles I. (2) Corequisite: MATH 1241. An introduction to the different disciplines within engineering; the College's computing system; academic, personal and professional development; teamwork; project planning; engineering design; engineering calculations; and oral and written communication skills within a multi-disciplinary format.

ENGR 1202: Introduction to Engineering Practices and Principles II. (2) Prerequisite: ENGR 1201 with a grade of C or better. Additional prerequisite for mechanical engineering majors: MATH 1241 with a grade of C or better. Corequisite: ENGR 1201 with permission of Department. Applications in the disciplines of Civil, Electrical, and Mechanical Engineering using tools and techniques specific to the major. Emphasis on analytical and problem solving skills and understanding of the profession/curriculum.

ENGR 3295. Multidisciplinary Professional Development. (1) Prerequisite: Senior standing or Junior standing per departmental requirements. A series of multidisciplinary and disciplinary seminars and activities designed to introduce students to basic concepts of professionalism in engineering. Topics include entrepreneurship, ethics, and career planning. *(Pass/No Credit)*

ENGR 3590. Engineering Cooperative Education and 49ership Experience. (0) This course is required of Co-op and 49ership students during the semester they are working. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and Co-op) and receive full-time student status (Co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center.

ENGR 3670. Total Quality Systems. (3) Prerequisite: Junior or Senior status and permission of instructor. An interdisciplinary approach to principles and practice in the applications of continuous quality improvement (CQI) and Total Quality Management (TQM). Classroom work on major applications, re-engineering processes; process mapping, personal effectiveness and time management; technical presentations; CQI tools, statistical process control, designed experimentation; management and planning tools, engineering economy, and case studies; assignments and projects in team building, communication, and group problem solving.

ENGR 4090. Special Topics. (1-4) Directed study of current topics of special interest. May be repeated for credit. *(On demand)*

EARTH SCIENCES (ESCI)

ESCI 1101. Earth Sciences-Geography. (3) Basic geographical principles and processes in physical geography and the earth sciences: geographic locational methods, earth-sun relationships, earth radiation balance, atmospheric temperature and pressure, interpretation and simple forecasting of weather from mapped data, interpretation of soil-moisture and evapotranspiration balances, soil, climate systems, and biomes. *(Fall, Spring) (Evenings)*

ESCI 1101L. Earth Sciences-Geography Laboratory. (1) Prerequisite or corequisite: ESCI 1101. Experimental study and investigation of the basic

principles and processes in physical geography and the earth sciences; geographic locational methods, earth-sun relationships, earth radiation balance, atmospheric temperature and pressure, interpretation and simple forecasting of weather from mapped data, interpretation of soil-moisture and evapotranspiration balances, soil, climate systems and biomes. One laboratory period of two hours per week. *(Fall, Spring) (Evenings)*

Note: Although the laboratory and lecture sections of ESCI 1101 are taught as separate courses, it is strongly recommended that students take ESCI 1101L concurrently with ESCI 1101. Students with scheduling problems or students not fulfilling the University science and technology requirements may take the lecture without the laboratory. Students fulfilling the University science and technology requirements must either: (a) Take ESCI 1101 and ESCI 1101L concurrently; or (b) Take ESCI 1101L in a semester subsequent to taking ESCI 1101.

ESCI 2000. Topics in Earth Sciences. (1-4) Treatment of major topical issues in Earth Sciences. May be repeated for credit as topics vary. *(On demand)*

ESCI 2101. The Environmental Dilemma. (3) Nature, causes, and responses to major environmental problems. (*Yearly)*

ESCI 2200. Introduction to Earth Sciences Research. (3) Prerequisites or corequisites: ESCI 1101; GEOL 1200 and 1200L. Basic techniques common to research in all of the earth sciences. Research design and organization, utilization of literature resources, and the use of quantitative methods. *(On demand)*

ESCI 2210. Field Methods in the Earth Sciences. (4) Prerequisites: ESCI 1101-1101L; GEOL 1200-1200L; and ENGL 2116 or permission of instructor. Field techniques used in studies of geology, topography, and earth sciences. Skills related to the collection and presentation of scientific data emphasized. Three lecture hours, three hours of lab per week. Earth Sciences majors should take ESCI 2210 as soon as possible after completion of ESCI 1101-1101L and GEOL 1200-1200L. (*Spring, Fall*)

ESCI 3000. Selected Topics in Earth Sciences. (1-4) Prerequisite: ESCI 1101-1101L or GEOL 1200-1200L and permission of instructor. In-depth treatment of specific topics selected from one of the fields of the earth sciences. May be repeated for credit as topics vary. (*On demand*)

ESCI 3105. Oceanography. (3) Oceanography with an emphasis on physical, chemical, and geological aspects of the world oceans. Oceanic circulation, seawater composition and chemistry, and marine sedimentation and geology. *(Summer)*

ESCI 3150. Natural Environments of North America. (3) Prerequisites: ESCI 1101 or GEOL 1200-1200L. Regional geomorphology and ecology of North America with emphasis on development, maintenance, and interaction of the geomorphic and ecological provinces. (*On demand*)

ESCI 3170. Environmental Quality Management. (3) Prerequisites: ESCI 1101-1101L. Selected methods of air and water resource analysis with emphasis on conceptual models and statistical techniques of environmental and risk assessment. *(Fall)*

ESCI 3180. Environmental Impact Analysis. (3) Prerequisites: ESCI and GEOL majors with junior or senior standing. Environmental impact requirements and associated procedures, guidelines, and methods of assessing physical environmental impacts. Three hours per week of combined lecture and supervised field work leading to the preparation of an environmental impact statement for a locally proposed action. (*On demand*)

ESCI 3500. Earth Sciences Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the Department's earth sciences cooperative education and 49ership students during each semester that they are working. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (*Fall, Spring, Summer*)

ESCI 3501. Earth Sciences Cooperative Education Seminar. (1) This course is required of earth sciences cooperative education students in each semester following a work assignment for presentation of earth sciences reports on the co-op learning experience. (*Fall, Spring, Summer*)

ESCI 4000. Selected Topics in Earth Sciences. (1-4) Prerequisites: ESCI 1101-1101L, GEOL 1200-1200L, or permission of the instructor. In-depth treatment of specific topics selected from one of the fields of the earth sciences. May be repeated for credit as topics vary. *(On demand)*

ESCI 4005. Engineering Geology. (3) Prerequisites: GEOL 1200, 1200L, or permission of instructor. the application of geologic principles, techniques, and data to problems in the technology and use of earth materials. *(On demand)*

ESCI 4140. Hydrologic Processes. (4) Prerequisite: ESCI 1101-1101L or GEOL 1200-1200L. Atmospheric, soils, and geologic aspects of surface and ground water processes. Three lecture hours and one three-hour lab per week. (*Fall*)

ESCI 4155. Fluvial Processes. (4) Prerequisites: ESCI 1101-1101L or GEOL 1200-1200L. Hydrologic and geomorphic study of the transport of water and earth materials within stream systems. Erosion, mass wasting, open channel flow, sediment transport, flooding, stream

channel morphology, morphometry of drainage basins, and related topics. Three lecture hours, three lab hours per week. (*Spring*)

ESCI 4160. Contaminant Transport. (3) Prerequisites: GEOL 1200, 1200L, ESCI 1101, 1101L, GEOL 4145, or permission of instructor. Development and application of equations describing mass and energy transport in the subsurface environment. Three hours lecture per week. *(On demand)*

ESCI 4170. Fundamentals of Remote Sensing. (4) Prerequisite: ESCI 1101-1101L or GEOL 1200-1200L, or permission of instructor. Physical fundamentals of remote sensing and overview of airborne and satellite systems operating in the visible, infrared, and radar regions, and a review of applications for resource exploration, environmental studies, land use and land cover analysis, and natural hazards. Three lecture hours and one three-hour lab per week. (*Fall)*

ESCI 4180. Digital Image Processing in Remote Sensing. (4) Prerequisite: ESCI 4170 or permission of instructor. Scientific and computational foundations of digital image processing techniques for extracting earth resource information from remotely sensed data. Three lecture hours and three lab hours per week. *(Spring)*

ESCI 4210. Soil Science. (4) Prerequisites: GEOL 1200, 1200L, ESCI 1101, 1101L, GEOL 3115, GEOL 3124, or permission of instructor. Study of soils, soil-forming processes and soil morphology with an emphasis on soils as they relate to geologic landscapes and surficial processes. Students will learn how to describe and interpret soils in the field. Three hours lecture, three hours lab per week with occasional field trips. *(Fall)*

ESCI 4222. Watershed Science. (3) Prerequisites: Earth Science Majors and M.A. Geography students: ESCI 4140 or 4155 or GEOL 4145; Biology Majors and M.S. Biology students: BIOL 4149 and permission of the instructor; Civil Engineering Majors and M.S.C.E. students: CEGR 3141 or 5144 and permission of the instructor; all others require the permission of the instructor. Examinations of the cycling of water and chemical elements in natural and perturbed watersheds with emphasis on linkages between the hydrologic and biogeochemical processes which control runoff water quality. Topics include runoff processes, evapotranspiration, nutrient export and stream, riparian and hyporheic zone hydrochemical dynamics. *(Spring, Alternate years)*

ESCI 4233. Geoenvironmental Site Characterization. (4) Prerequisites: Earth Sciences, Geology, and M.A. Geography majors: ESCI 4140 or 4155. Others require permission of the instructor. Advanced field-based examination of hydrologic and geologic conditions in the southeastern United States within the context of current state and federal regulatory requirements and site characterization activities currently performed by professional environmental geoscientists. Topics include hydrologic investigation and water quality characterization, and geological and geophysical site investigations. *(On demand)*

ESCI 4400. Internship in Earth Sciences. (3-6) Prerequisite: Permission of the department. Research and/or work experience designed to be a logical extension of a student's academic program. The student must apply to the Department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The Department will attempt to place the selected students in cooperating community organizations to complete specified research or work-related tasks which are based on a contractual arrangement between the student and community organization. The student can receive three to six hours credit, depending on the nature and extent of the internship assignment. (*On demand*)

ESCI 4600. Earth Sciences Seminar. (1) (O) Prerequisites: ESCI 1101, 1101L, GEOL 1200, 1200L and senior standing for Earth Sciences and Geology majors or permission of the instructor. Advanced seminar series examining major historical and modern research themes in the Earth Sciences. Course work consists of a series of independent and group oral presentations. The seminar meets weekly for two hours. Course may be repeated for credit as topic varies. *(Fall, Spring)*

ESCI 4800. Individual Study in Earth Sciences. (1-4) Prerequisite: Permission of the Department and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit as topics vary. (*On demand*)

CIVIL ENGINEERING TECHNOLOGY (ETCE)

ETCE 1121. Construction Methods. (3) An introduction to the basic construction methods and operations used on civil engineering projects. Topics include basic construction and civil engineering terminology, identification and selection of construction equipment and techniques, and an overview of the components and processes used in the construction of concrete, steel, and wood-framed structures. *(Fall)*

ETCE 1211. Surveying I. (3) Prerequisite or corequisite: MATH 1103. Corequisite: ETCE 1211L. An introductory field surveying and site planning course covering standards, units, and calibration of equipment, measurement of distance, elevation, angles, and analysis of systematic and random errors in the measurement, adjustments of measurements, weighting, and principle of least squares. Two hours of lecture per week. *(Spring)*

ETCE 1211L. Surveying I Laboratory. (0) Prerequisite or corequisite: MATH 1103. Corequisite: ETCE 1211. Laboratory supporting ETCE 1211. Three hours of laboratory per week. *(Pass/No Credit grading) (Spring)*

ETCE 1222. Construction Materials. (3) Corequisite: ETCE 1222L. Study of the behavior and physical properties of basic construction materials. Topics include mineral aggregates, Portland cement concrete, masonry, wood, asphalt concrete, metals, plastics, and other materials. Two hours of lecture per week. *(Spring)*

ETCE 1222L. Construction Materials Laboratory. (0) Corequisite: ETCE 1222. Laboratory supporting ETCE 1222. Three hours of laboratory per week. *(Pass/No Credit grading) (Spring)*

ETCE 2112. Construction Surveying and Layout. (3) Prerequisites: CMET 1211 and ETGR 1103. Corequisite: ETCE 2112L. An intermediate surveying and site-planning course covering plane survey, design and layout of horizontal and vertical curves, direction and traversing, design of site plant, control of grading, and global positioning system. Two hours of lecture per week. *(Fall)*

ETCE 2112L. Constructions Surveying and Layout Laboratory. (0) Prerequisites: CMET 1211, ETGR 1103. Corequisite: ETCE 2112. Laboratory supporting ETCE 2112. Three hours of laboratory per week. *(Pass/No Credit grading) (Fall)*

ETCE 2410. Introduction to Environmental Engineering Technology. (3) Prerequisites: MATH 1103, ETGR 1201. This course is designed to serve as an introduction to environmental engineering technology. The course will provide an overview of the environmental field to include laws and regulations, water quality, hydraulic and hydrologic fundamentals, water and wastewater treatment, groundwater contamination, and solid waste management. *(Spring)*

ETCE 3123. Cost Estimating. (3) Prerequisites: ETCE 1222, ETCE 2112 or AAS degree or Departmental approval. Methods used to determine material quantities, labor and equipment requirements, and costs associated with construction activities and projects. *(Fall)*

ETCE 3131. Foundations and Earthwork. (3) Prerequisite: ETGR 2102 or AAS degree. Study of basic design and construction of foundations. Background theories are generally introduced in concise forms as formulas or charts. Emphasis on practical aspects of foundation design and earthwork construction. *(Fall)*

ETCE 3131L. Soil Testing Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 3131. Laboratory designed to familiarize the student with the common laboratory soil tests and analysis procedures with emphasis on the significance of the various tests, the testing procedures and the detailed computations. Three laboratory hours per week. *(Fall)*

ETCE 3163. Structural Analysis and Design I. (3) Prerequisite: ETGR 2102 or AAS degree. Basic concepts and principles of structural analysis and design. Emphasis on practical aspects of structural analysis and design to include beams, columns, trusses, frames, and temporary structures for construction projects. *(Fall)*

ETCE 3163L. Structures and Materials Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 3163. Laboratory designed to evaluate structural materials commonly encountered in the civil and construction environments. Basic beam, truss and frame experiments will be conducted. Standard laboratory and field tests for typical materials such as block, brick, asphalt, concrete, steel and timber will be performed. Three laboratory hours per week. *(Fall)*

ETCE 3242. Hydraulics & Hydrology. (3) Prerequisites: ETGR 2102, ETCE 2410 or AAS degree. A study of the fundamental principles of hydraulics and their application in engineering practice, including the fundamentals of fluid flow through orifices, tubes and pipes, in open channels, and over weirs, pump design, network analysis, and modeling. *(Spring)*

ETCE 3242L. Hydraulics Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 3242. Laboratory designed to provide the student with an understanding of the apparatus, techniques, and procedures used to measure hydraulic fluid properties and to verify the fundamentals of fluid flow through orifices, tubes and pipes, in open channels, and over weirs. Three laboratory hours per week. *(Spring)*

ETCE 3264. Structural Analysis II. (3) Prerequisites: ETCE 3163, MATH 1121. Deflection of structures. Analysis of statically determinate structures under fixed and moving loads, influence lines for moving loads. Analysis of statically indeterminate structures using the methods of three-moments, consistent distortions, slope deflection, moment-distribution and approximate analysis. An introduction to matrix methods of structural analysis. *(Spring)*

ETCE 3271. Building Systems. (3) Prerequisite: ETCE 2410. Basic theory and practical application of heating, ventilation, air conditioning, plumbing and electrical systems in construction. Study of National Fire and Plumbing Codes. *(Spring)*

ETCE 3271L. Building Systems Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 3271. Laboratory exercises demonstrating the basic theory and practical application of heating, ventilation, air conditioning, plumbing and electrical systems in construction. Three laboratory hours per week. *(Spring)*

ETCE 4073. Special Topics – Civil Engineering Technology. (1-4) Prerequisite: senior standing and permission of instructor. A study of new and emerging technical topics pertinent to the field of civil engineering technology. May be repeated for credit. *(On demand)*

ETCE 4126. Project Scheduling and Control. (3) Prerequisite: ETCE 3123. Planning, scheduling, and monitoring construction projects, including development of critical path networks, Gannt bar charts, construction cost control, and reporting practices. *(Fall)*

ETCE 4126L. Construction Practices Laboratory. (1) (W)

Prerequisite or Corequisite: ETCE 4126. A synthesis of prior work using fundamental scheduling and cost estimating principles as applied in a directed project. Three laboratory hours per week. *(Fall)*

ETCE 4143. Water and Wastewater Systems. (3) Prerequisite: ETCE 3242 and CHEM 1111 or CHEM 1251. Study of water supply, treatment, and distribution and liquidwaste disposal systems. *(Fall)*

ETCE 4143L. Environmental Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 4143. Laboratory on the analysis of water and sewage and problems related to environmental control. Three laboratory hours per week. *(On demand)*

ETCE 4165. Structural Steel Design. (3) Prerequisite: ETCE 3163. Design of beams and columns, floor framing, tensions and compression members, bolted and welded connections according to AISC specifications. *(Fall)*

ETCE 4251. Highway Design and Construction. (3) Prerequisite: ETCE 2112 or AAS degree. Introduction to highway planning, economic considerations, and traffic engineering. Design and construction of modern highways including grade separations and interchanges. *(Spring)*

ETCE 4251L. Asphalt Mixtures Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 4251. Study of physical properties of asphalt, of aggregates and their combinations, principles and practice in the design, construction and control of asphalt mixtures; laboratory tests for asphalts, aggregates, and mixture design, including specimen preparation and stability evaluation. Three laboratory hours per week. *(On demand)*

ETCE 4266. Reinforced Concrete Design. (3) Prerequisite: ETCE 3163. Design of rectangular beams, T-beams, columns, reinforced concrete floor systems, and reinforced concrete footings according to ACI code. Quality control of concrete and structural inspection. *(Spring)*

ETCE 4272. Capstone Project. (2) (W,O) Prerequisite: Senior standing in Civil Engineering Technology or permission of the department. Utilization of students' previous course work to creatively investigate and produce solutions for a comprehensive civil engineering technology project. *(Spring)*

ETCE 4344. Applied Hydrology and Storm Water Management. (3) Prerequisite: ETCE 3242. Treatment of hydrologic principles, prediction of runoff, design of storm water systems and controls, and the application of best management practices. *(On demand)*

ELECTRICAL ENGINEERING TECHNOLOGY (ETEE)

ETEE 1101. Electronics Lab I. (1) Prerequisite or corequisite: ETEE 1123. Experiments that support the concepts and practices covered in ETEE 1123. Three laboratory hours per week.

ETEE 1123. DC Circuit Analysis. (3) Prerequisite or corequisite: MATH1100. This course is an introduction to DC electricity with an emphasis on circuit analysis and measurements. Topics include DC principles, circuit analysis laws and theorems, components, and test equipment operation.

ETEE 1201. Electronics Lab II. (1) Prerequisite or corequisite: ETEE 1223 and ETEE 1213. Experiments that support the concepts and practices covered in ETEE 1223 and ETEE 1213. Three laboratory hours per week.

ETEE 1213. Digital Circuits I. (3) Prerequisite: ETEE 1123. An introductory course in digital concepts, number systems, logic gates, Boolean algebra and combinational logic. Introduction to logic programming. Introduction to digital circuit technologies.

ETEE 1223. AC Circuit Analysis. (3) Prerequisite: ETEE 1123. Corequisite: MATH 1103. This course introduces AC electricity with an emphasis on circuit analysis, measurements, AC principles, circuit analysis laws and theorems, components and test equipment operation.

ETEE 2101. Electronics Lab III. (1) Prerequisite or corequisite: ETEE 2113. Experiments that support the concepts and practices covered in ETEE2113 (Electronic Devices): Introduction to semiconductor based devices with an emphasis on analysis, selection, biasing and applications in power supplies, small signal amplifiers, and switching and control circuits. Three laboratory hours per week.

ETEE 2113. Electronic Devices. (3) Prerequisite: ETEE 1223 and MATH1103. This course is an introduction to semiconductor-based devices such as diodes, bipolar transistors, FETs, thermistors, and related components. Emphasis is placed on analysis, selection, biasing, and applications in power supplies, small signal amplifiers, and switching and control circuits.

ETEE 2122. Electronic Drafting and Design. (2) Prerequisite: ETEE 1223. Corequisite: ETEE 2113. This course introduces computer-aided drafting (CAD) with an emphasis on application in the electronics field. Topics include electronics industry standards (symbols, schematic diagrams, layouts); drawing electronic circuit diagrams; electronic drafting practices and components such as resistors, capacitors, and ICs. Topics include editing, screen capturing, and cutting/pasting into reports.

ETEE 2133. Digital Circuits II. (3) Prerequisite: ETEE 1213. Design and application of sequential circuits including flip-flops, counters, registers, and their interactions as state machines. Introduction to the architecture of microprocessors. Introduction to digital signal processing.

ETEE 2143. Introduction to Electrical Power Systems. (3) Prerequisite: ETEE 1223. This course covers the

basic principles of electric power systems, including transmission lines, generator and transformer characteristics, and fault detection and correction. Emphasis is placed on circuit performance analysis in regards to voltage regulation, power factor, and protection devices.

ETEE 2201. Electronics Lab IV. (1) Prerequisite or corequisite: ETEE 2213. Experiments that support the concepts and practices covered in ETEE2213 (Introduction to Microprocessors): Introduction to microprocessor architecture and microcomputer systems including memory and input/output interfacing, assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, and interrupts.

ETEE 2213. Introduction to Microprocessors. (3) Prerequisite: ETEE 1213. This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing, assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, and interrupts.

ETEE 2233. Introduction to Computer Networks. (3) Prerequisite: ETEE 1213. The fundamentals of local area networks and their operation in business and computer environments is covered, including the characteristics of network topologies, system hardware (repeaters, bridges, routers, gateways), system configuration, and installation and administration of the LAN.

ETEE 2243. Introduction to Control Systems. (3) Prerequisites: ETEE 1213 and ETEE 1223. The fundamental concepts of control, systems, sensors, actuator, and associated peripheral devices are covered, including rotating machine theory, ladder logic, electromechanical and solid state relays, motor controls, pilot devices, and PLC (programmable logic controllers), programming and networking.

ETEE 3124. Analysis of Linear Networks II. (4) Prerequisite: ETEE 3133 with a grade of C or better. Corequisite: ETGR 3171. Circuit analysis utilizing network theorems and techniques in the frequency domain. 2nd order responses. Two port network analysis and transfer functions. Bode plots; transformers and filter applications; introduction to Fourier analysis. Application of simulation software for circuit analysis.

ETEE 3133. Analysis of Linear Networks I. (3) Prerequisite: ETEE 1223 or AAS degree. Corequisites: MATH 1121 or ETGR 3171 and junior standing in ET department. Resistive circuits; current and voltage sources; Kirchoff's laws, network theorems, RC and RL circuits; waveform analysis and synthesis; time domain circuit analysis; 1st order natural and forced responses; Laplace Transform fundamentals. Circuit transformations. Intro to frequency domain circuit analysis. Application of simulation software for circuit analysis.

ETEE 3153. ELET Laboratory V. (1) (W) Corequisites: ETEE 3133 and ETEE 3183. Experiments which support concepts and practice covered in ETEE 3133 and ETEE 3183. Three laboratory hours per week.

ETEE 3156. ELET Laboratory VI. (1) (W) Corequisite: ETEE 3124. Experiments with support concepts and practice covered in ETEE 3124. Three laboratory hours per week.

ETEE 3183. Digital Logic Design. (3) Prerequisite: ETEE 1213 or AAS degree and junior standing in ET department. Design of combinational and sequential digital logic circuits. Minimization methods and state assignment techniques. Circuit implementation using MSI, LSI, and programmable circuits. Introduction to computer architecture.

ETEE 3211. Active Networks I. (3) Prerequisite: ETEE 3124 with a grade of C or better and ETGR 3171. Rectifiers; amplifiers analysis; transistor biasing; small signal models; feedback amplifier analysis; amplifier frequency response.

ETEE 3212. Active Networks II. (3) Prerequisite: ETEE 3211 with a grade of C or better. Amplifier frequency response (continued); feedback amplifier frequency response; operational amplifiers and applications.

ETEE 3213. Industrial Electronics. (3) Prerequisite: ETEE 3124. Prerequisite or corequisite: ETEE 3211. Powerdiodes, bipolar power transistors, thyristors, power MOSFET's and their circuit applications to industrial problems.

ETEE 3214. Operational Amplifiers with Applications. (3) Prerequisite: ETEE 3211. Idea OP-AMP analysis, practical OP-AMP considerations, linear OP-AMP circuits, nonlinear OP-AMP circuits, practical applications.

ETEE 3222. Automatic Controls. (3) Prerequisite or corequisite: ETEE 3212. Automatic control concepts; mathematical models; control system components; transient and frequency response; control system design.

ETEE 3230. Electronic Communications. (3) Prerequisites or corequisites: Senior status in ET or permission of department. This course covers basic principles and concepts of modern communication systems. Topics include systems, signals, modulations, transmission, reception and networks. *(On demand)*

ETEE 3240. Fiber Optics Systems. (3) Prerequisites or corequisites: Senior status in ET or permission of department. Introduction to optical fiber communications systems. Review of ray and wave optics. Fundamentals of amplitude, frequency, and digital modulation/demodulation. Optic fiber waveguides. Light sources and detectors. Components, systems, and networks. *(On demand)*

ETEE 3255. ELET Laboratory VII (Computer Emphasis). (1) (W) Corequisite: ETEE 3211.

Experiments which support concepts and practice covered in ETEE 3211. Three laboratory hours per week.

ETEE 3257. ELET Laboratory VII (Electronics Emphasis). (1) (W) Corequisite: ETEE 3211. Experiments which support concepts and practice covered in ETEE 3211. Three laboratory hours per week.

ETEE 3260. Opto-Electronic Communications Laboratory. (1) (W) Corequisite: ETEE 3230, ETEE 3240, senior status in ET or permission of department. Opto-electronic Communications system measurements, instrumentation, and applications. Experiments support concepts and practice covered in ETEE 3230 and 3240. *(On demand).*

ETEE 3261. Industrial Instrumentation. (3) Prerequisites: ETEE 3124. Pneumatic and electrical sensors and transducers used for measuring physical processes, such as temperature, pressure, and flow rate; selection criteria; standards and calibration. *(On demand)*

ETEE 3275. Integrated Circuit Applications. (3) Prerequisites: ETEE 3183. Study of the external characteristics of digital and analog integrated circuits. Applications of these circuits in digital systems. Design constraints and considerations due to device limitations. Device selection based upon application requirements.

ETEE 3281. Computer Design. (3) Prerequisite: ETEE 1213 or AAS degree and junior standing in ET department. Corequisite: ETEE 3183. Organization and design approaches for computer network systems. LAN design, hardware and software considerations, network operating systems, TCP/IP fundamentals.

ETEE 3284. Design of Real-Time Systems. (3) Prerequisite: ETEE 3285. Prerequisite or corequisite: ETEE 3281. Characteristics and applications of real-time computer systems, especially as applied to process control, monitoring, and data collection; the computer as a part of the total system, programming for real-time applications; reliability and maintainability; effects of downtime. *(On demand)*

ETEE 3285. Assembly-Language Programming. (3) Prerequisite: ETEE 1213 or AAS degree and junior standing in ET department. Corequisite: ETEE 3183. Programming methodology and assembly language programming for the MC6800 series microprocessors.

ETEE 3286. Microcomputer Applications. (3) Prerequisite: ETGR 2122 or AAS degree and junior standing in ET department. Applied programming of microcomputers for engineering applications using Java. Object-oriented program design methods, Graphical user interfaces for data input and output, computer graphics, and computer animation.

ETEE 3641. Senior Design Project. (1) (W) (O) Prerequisite: Senior standing in Electrical Engineering Technology or permission of the department. A senior design project with a topic agreed to by student and instructor. Course builds upon technology course work and professional topics seminar. Topics include project planning design, construction, test documentation, and oral presentation of results.

FIRE SAFETY ENGINEERING TECHNOLOGY (ETFS)

ETFS 1120. Fundamentals of Fire Protection. (3) This course is an introduction to the relevant issues one would encounter upon entering a career in fire protection. The course is an overview of many areas including fire protection career opportunities, history of public fire protection, general chemistry and physics of fire, codes and ordinances and fire protection systems and equipment.

ETFS 1232. Fire Protection Hydraulics and Water Supply. (3) Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems.

ETFS 1252. Fire Protection Law. (3) Provides information about potential legal liabilities encountered every day by fire, safety and emergency personnel. Explains how to research, read and understand various statutes, regulations & cases. Actual cases are presented in detail and followed by explanations that identify the most important issues facing emergency & safety personnel.

ETFS 2124. Fundamentals of Fire Prevention. (3) This class provides a fundamental overview of the history and philosophy regarding fire prevention. Class will investigate the organizational and operational aspects of a fire prevention bureau including the use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protections systems, fire investigation, and the positive effects of fire and life-safety education.

ETFS 2126. Fire Investigation. (3) This course covers investigation into various types of fires: structure, wildland, automobile, fabric, and chemical. Topics include fire chemistry and physics, scene analysis, case analysis, arson, the new generation of petroleum products, post-flashover patterns of damage, misuse of post-fire indicators, and documentation.

ETFS 2132. Building Construction for Fire Protection. (3) Studies the components of building construction that relate to fire and life safety. The focus of this course is on fire fighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

ETFS 2144. Fire Protection Systems. (3) Provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler

systems, water supply for fire protection and portable fire extinguishers.

ETFS 2230. Hazardous Materials. (3) This course focuses on the basic knowledge required to evaluate the potential hazards and behavior of materials considered hazardous. The course examines the reasons for chemical behavior of hazardous materials and is designed to improve decision making abilities when hazardous materials are encountered in the workplace or at an emergency scene.

ETFS 2264. Fire Behavior and Combustion. (3) Explores the theories and fundamentals of how and why fires start, spread, and are controlled.

ETFS 2264L. Fire Behavior and Combustion Laboratory. (1) Laboratory experiments and hands-on computer simulations to illustrate the concepts presented in ETFS 2264.

ETFS 3103. Principles of Fire Behavior. (3) Fundamental principles of fire chemistry and physics, and mechanisms that control enclosure fires. Topics include basic principles of fluid mechanics, thermodynamics, heat transfer, and combustion as far as those subjects relate to fire dynamics; ignition of liquids and solids; flame spread over liquid and solid surfaces and through porous fuel beds; burning rate; diffusion flames and plumes; combustion products; and compartment fires.

ETFS 3113. Building Fire Safety. (3) Construction standards and codes to ensure acceptable levels of fire safety in buildings. Topics include anatomy of building construction, building construction features affecting fire performance, fundamentals of reading plans and specifications, the traditional code approach to passive fire protection, trade-offs between active and passive fire protection, concepts of rational fire design for structural members, and performance-based fire design as an alternative to traditionally prescriptive codes.

ETFS 3123. Industrial Hazards & Electricity. (3) Typical industrial hazards encountered including: compressed gasses, chemicals, bio-toxins, radiation sources, boilers and ovens. Introductory concepts and methods of analysis of AC & DC circuits, electrical switchgear, and rotating machinery. Compliance & reporting issues in an industrial setting. Safety procedures and safety equipment will also be discussed in regards to working as a fire safety engineer.

ETFS 3124. Risk Management for the Emergency Services. (3) An exploration of management and organizational principles with emphasis on controlling the risk associated with operations in the emergency services. In depth discussion of recognizing and controlling risk, personnel accountability, incident management systems and post-incident analysis as related to the emergency services. Critical analysis of private protection measures available to reduce loss potential.

ETFS 3144. Active Fire Protection. (3) Review of fire suppression, alarm, and smoke control systems. Topics include fixed and portable suppression systems, fire suppression agents and extinguishing mechanisms, fire detection devices, fire protective detection and signaling systems, smoke production in fires and principles of smoke movement and management.

ETFS 3183. Fire Safety Engineering Problem Analysis. (3) Prerequisite: ETFS 3103. Methods of solving fire safety engineering problems. Topics include enclosure fire radiation heat transfer calculations; calculations of vent flows in enclosure fires; estimating ignition, flame spread, and heat release rate properties of materials on the basis of experimental data; smoke filling of enclosures; and conduction heat transfer through fire protective materials.

ETFS 3233. Applied Fire Engineering Design and Analysis. (3) Prerequisite: ETFS 3103. Application of fire safety engineering technology in fire design and analysis of fires. Topics include computer modeling of compartment fires and emergency evacuation of buildings, structural fire design, sprinkler system design, performance-based design, and fire investigation and reconstruction.

ETFS 3400. Practicum. (1-4) Prerequisite: Must be classified as a junior, have a cumulative 2.2 GPA and the approval of FSET program faculty. This course is designed to allow students to participate in an approved applied practicum designed to allow theoretical and course-based learning in a supervised fire and/or safety related environment. Each practicum experience is individual and is arranged with a contract between the supervising faculty member, the student and the employer. Students must complete the practicum proposal form and identify a faculty member who will direct and evaluate the completed work. Practicum requires a weekly progress report as well as a final report and presentation to be graded by the supervising faculty member. May be repeated for up to a total of 4 hours. *(On demand)*

ETFS 3611. Professional Leadership Seminar. (1) (W) (O) This course is to provide a framework of executive-level competencies by focusing primarily on areas and issues of personal effectiveness. The issue of command perspective vs. a first line fire fighter perspective are examined. The course includes case study analysis, role-playing and experiential activities. Students will develop desirable goals in the areas of their professional, personal community, and family life. Course topics include leadership, multiple roles, decision skills, influencing leaders, coaching and mentoring, and effective use of personal computing.

ETFS 3800. Independent Study. (1-3) Prerequisite: Must be classified as a junior, have a cumulative 2.2 GPA and the approval of FSET program faculty. This course is designed to allow students to take responsibility for the direction of their learning about a topic of interest to them. Each independent study is individual and is arranged with a contract between the supervising faculty member and the student. Students must complete the independent study proposal form and

identify a faculty member who will direct and evaluate the completed work. Each hour of credit for this course should be comparable to what would be expected in the classroom – 15 hours contact time plus outside work or approximately 30 hours. The project is culminated with a final report and presentation. May be repeated for a total of 3 hours. *(On demand)*

ETFS 4123. Command and Control of Major Disasters. (3) This course focuses on the commanding officer's responsibility while conducting major operations involving multi-alarm units and man-made disasters that may require interagency or jurisdictional coordination. Earthquakes, hurricanes, terrorism, hazardous materials releases, tornadoes, and floods are some of the topics covered. Emphasis is placed on rapid fireground decision making, advanced incident command, command and control, safety, personnel accountability, hazard preparedness, mitigation, response, recovery, evacuation, sheltering and communications.

ETFS 4243. Research Investigation. (3) (W) (O) Application of practical, up-to-date review of fire research and its application. The transfer of research and its implications for fire prevention and protection programs are addressed. Development of a student project and a written report in a specified area in fire administration or fire science technology with faculty supervision. Analytical modeling, technical research, oral and written reporting of progress and findings are required.

ETFS 4323. Advanced Fire Service Administration. (3) A study of management theories, leadership philosophies and strategies for the fire service. Emphasis in the course will be on planning, organizing staffing, and evaluating fire protection services. Public fire education, loss prevention principles, and management of resources particular to fire and emergency services are addressed. Discussion of techniques for assessment of public fire protection and its impact on the community and environment.

ENGINEERING TECHNOLOGY (ETGR)

ETGR 1100. Engineering Technology Computer Applications. (3) This course introduces the use of computer applications required for engineering technologists. Topics include using the computer to solve technical problems, an introduction to engineering computer applications, and the use of standard office applications in engineering applications. Also covered are topics introducing the use of scientific calculators and various engineering applications software.

ETGR 1103. Technical Drawing I. (2) This course deals with the fundamentals of technical drawing. Topics include drawing layouts, sketching, orthographic projections, views, lines, dimensioning techniques, and introduction to Computer Aided Drawing (CAD). Upon completion of the course, students should be able to understand, interpret, and produce basic technical drawings, as well as be familiar with the most common commands of modern computer aided drawing tools such as AutoCAD. One hour of Lecture and three hours of laboratory per week.

ETGR 1104. Technical Drawing II. (2) Prerequisite: ETGR 1103. This course is a continuation of ETGR 1103, and introduces the student to advanced techniques of Computer Aided Drawing (CAD). Topics include three-dimensional wireframe, surface, and solid models, as well as rendering and generation of two-dimensional technical drawings from three-dimensional models. Upon completion of the course, students should be able to create, modify, and render three-dimensional models using modern computer aided drawing tools such as AutoCAD. One hour of lecture and three hours of laboratory per week. *(Spring)*

ETGR 1201. Introduction to Engineering Technology. (2) An introduction to the different disciplines within engineering technology; the College's computing system; academic, personal, and professional development; teamwork; project planning; engineering design; engineering calculations; and oral and written communication skills within a multi-disciplinary format.

ETGR 2101. Applied Mechanics I. (3) Prerequisite: Math 1103. This course covers fundamentals and applications of statics. Topics of study include the analysis of coplanar and noncoplanar force systems using analytical and graphical methods. Included are systems of forces and couples, equilibrium of particles and rigid bodies, distributed force systems, centroids and moments of inertia, and introduction to the analysis of structures.

ETGR 2102. Applied Mechanics II. (3) Prerequisite: ETGR 2101 Applied Mechanics I. This course covers the fundamentals of the mechanics of deformable bodies and introduces the student to the field of dynamics. Topics include concepts of stress and strain, axial load, statically indeterminate axially loaded members, the principle of superposition, torsion, bending and shear stresses in beams, deflection of beams, the elastic curve, transformation of stress and strain, Mohr's circle, introduction to stability and buckling of columns, and an introduction to dynamics.

ETGR 2106. AC & DC Circuits. (3) Prerequisites: PHYS 1102, MATH 1100. This course provides an introduction to AC and DC circuits. Simple series and series-parallel circuits will be used to illustrate applications of Ohm's Law and Kirchhoff's Laws. Power in DC resistive circuits will be discussed. Sine waves, complex numbers and phasors will be introduced to show their applications to analysis of AC circuits. Capacitors and inductors and their effects will be covered.

ETGR 2122. Technical Programming. (3) This course introduces computer programming using a high level programming language as related to engineering technology. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays tables, and pointers.

ETGR 3000. Special Topics in Engineering Technology. (1-4) Prerequisite: senior standing in Engineering Technology or permission of the department. Examination of specific new areas which are emerging in the various fields of engineering technology. The course builds upon the knowledge the students have gained from their engineering technology curriculum. May be repeated for credit. *(On demand)*

ETGR 3071. Engineering Technology Professional Seminar. (1) (W) Provides an introduction to the Department of Engineering Technology, the William States Lee College of Engineering, and UNC Charlotte. Addresses professional issues such as ethics, corporate culture, and team work. Relies heavily on computer usage outside of class.

ETGR 3171. Engineering Analysis I. (3) Prerequisites: differential and integral calculus. Methods of solving engineering problems which involve the differentiation and integration of algebraic, trigonometric and logarithmic functions; use of integral tables.

ETGR 3222. Engineering Economics. (3) Principles of evaluating alternative engineering proposals. Compound interest formulas and applications, present worth, equivalent uniform annual value, rate of return, depreciation and depletion, economic feasibility of projects.

ETGR 3223. Geometric Dimensioning & Tolerancing and Metrology. (3) Prerequisite: Knowledge of engineering graphics and machine shop practices. Study of the latest standard and methods available for the application of GD&T in interpretation and design of engineering drawings to assure form, fit and function while maintaining manufacturing efficiency. Study of and laboratory experiences with precision dimensional measuring instrumentation and machines. Two hours of lecture and three hours of laboratory per week. *(On demand)*

ETGR 3233. Parametric Solid Modeling. (3) Prerequisite: ETGR 1104. Study of parametric solid modeling as a design/drawing tool using software such as ProlEngineer. Topics include creation of three-dimensional solid models, assemblies, and renderings, as well as generation of two-dimensional technical drawings from three-dimensional models. *(On demand)*

ETGR 3272. Applied Numerical Methods. (3) Prerequisites: ETGR 2122 or a course in programming using a higher level language, ETGR 3171. Numerical methods for the solution of engineering problems on the digital computer. Emphasis on applications to civil and mechanical engineering technology, using both commercial and student written programs.

ETGR 3643. Senior Design Project. (3) (W) (O) Prerequisite: Senior Standing and permission of academic advisor. A capstone course in which individual students or teams propose and design a device, system, or process using senior level tools and abilities in their chosen disciplines; teamwork skills; instruction and writing practice in problem definition, design objectives, writing proposals and progress reports, creative problem solving, project planning, design evaluation, final formal technical reports and oral presentations.

ETGR 3695. Engineering Technology Practicum Seminar. (1) Prerequisite: ETMF 3490 or ENGR 3590. Required during the semester immediately following each work assignment for students enrolled in either ETMF 3490 or ENGR 3590; for presentation of engineering reports (verbal and oral) on work done the prior semester. May be repeated for credit.

INDUSTRIAL ENGINEERING TECHNOLOGY (ETIN)

ETIN 3103. Methods Analysis. (3) Analysis of work methods; a study of work measurement systems; regression techniques in formula construction; progress curves. *(On demand)*

ETIN 3123. Production Control Systems. (3) Prerequisite: statistics. Principles, analysis and design of production and inventory planning and control systems. Demand forecasting, production scheduling and control systems and introduction to CPM. *(On demand)*

ETIN 3133. Quality Control. (3) Principles and applications of quantitative methods of quality control to design and production processes. Introduction to design of experiments, process control charts, Pareto charts, and other quality analysis tools for both service and manufacturing industries. *(On demand)*

ETIN 3203. Plant Layout. (3) Prerequisite: ETIN 3103. Designing a plant or office with respect to material handling, machine location, auxiliary services, capital requirements, safety and personnel organization. *(On demand)*

ETIN 3233. Occupational Safety. (3) Causes and prevention of industrial accidents. Hazardous processes and material. Design of accident prevention programs. *(On demand)*

ETIN 3243. Occupational Health Technology. (3) Methodology and philosophy of evaluating and monitoring the work environment for human stresses and toxic substances which affect the health of the worker. Topics include gases, vapors, fumes and dust; radio-activity hazards; occupational diseases; thermal stress; illumination and exhaust ventilation. (*On demand*)

ETIN 3263. Human Factors. (3) Human capabilities and limitations affecting communications and response in man-machine systems. Physiological and psychological fundamentals; anthropometrics. (*On demand*)

MECHANICAL ENGINEERING TECHNOLOGY (ETME)

ETME 1101. Manufacturing Processes. (3) This course surveys and introduces common manufacturing processes and design for manufacture considerations.

Student will be introduced to methods and equipment used to transform materials, and to the interdependency between geometry (form), materials properties, and processes and their effects on functionality of the manufactured artifact. Coverage will include processing of polymers, metals, and ceramics. The purpose of this course is to provide the students the conceptual understanding of materials processes.

ETME 2101. Applied Materials. (3) Prerequisite: MATH 1103. This course introduces the student to materials and to the concept that materials are designed to provide the desired properties in the same way that the parts themselves are designed. The students will learn to understand that the processes we use to change materials into the geometries we want for also change the properties of the materials. The course intends to approach materials from a design and manufacturing perspective.

ETME 2102. Mechanisms. (3) Prerequisites: ETGR 1103, PHYS 1101. This course covers plane motion and devices used to generate plane motion. Topics include analysis of displacement, velocity, acceleration, gears, cams and other mechanical systems. *(Spring)*

ETME 2156. Machine Shop Practices. (2) and Prerequisite: ETGR 1103. This course introduces students to machine shop techniques and designing for machining with a combination of lectures and projects. Students will learn design for machining guidelines, about specification of machining operations, and about shop measurement instruments and techniques. *(Spring)*

ETME 2156L Machine Shop Practices Lab. (1) See ETME 2156. *(Spring)*

ETME 2202. Introduction to Mechanical Design. (2) Prerequisites: ETGR 1104, ETGR 1201. This course introduces mechanical design techniques using computer based parametric modeling tools such as Autodesk Inventor. Topics include feature based solid modeling, design constraints, assemblies, mechanisms, animations, and design documentation via technical drawings. Proficiency is demonstrated by an end-of-term design project. *(Fall)*

ETME 3113. Dynamics. (3) Prerequisites: MATH 1121, ETGR 2101, and ETME 2102. The dynamic behavior of particles; translation, rotation and plane motion of a rigid body, the principles of conservation of energy and momentum.

ETME 3123. Strength of Materials. (3) Prerequisites: ETGR 2101 with a C or better. Corequisite: MATH 1121. Stress-strain relationships resulting from direct loads, torsional loads and bending loads, and the results obtained from applying more than one of these loads simultaneously. Beam deflection and column loading.

ETME 3133. Fluid Mechanics. (3) Prerequisite: ETGR 2101. Fundamental principles of fluid mechanics. Topics include manometry, buoyancy, forces on submerged bodies, boundary layers, flow over surfaces, Bernoulli's equation with applications, orifices, pipe losses and an introduction to hydrodynamics.

ETME 3143. Thermodynamics. (3) Prerequisites: MATH 1121. Fundamentals of thermodynamics including work and heat; classical approach to first and second laws of thermodynamics; ideal gas, entropy, reversibility, irreversibility, and study of various processes and cycles.

ETME 3151. Fluid Mechanics Laboratory. (1) (W) Prerequisite or corequisite: ETME 3133. Flow through conduits and in open channels, the experimental determination of fluid specific weights, viscosity and flash and fire points. Flow measuring devices such as orifices, venturi tubes, anemometers and pitot tubes. Laminar-turbulent flow and stability.

ETME 3152. Stress Analysis Laboratory. (1) (W) Prerequisite or corequisite: ETME 3123. Experiments illustrating stress-strain relationships in engineering materials and the use of brittle coating, photoelasticity and electrical-resistance strain gages.

ETME 3163. Instrumentation and Controls. (3) Prerequisite: ETGR 2106. Introduction to instrumentation for measurement and control of physical variables, with emphasis on electronic systems. Review of basic circuit analysis, electrical instruments, sensors and measurement principles and a survey of automatic controls from a systems point of view.

ETME 3213. Machine Design I. (3) Prerequisite: ETME 2101, ETME 3123. Analysis and design of clutches, brakes, belts and roller chain. Indeterminate normal loading, superposition of stresses and deflections, compound stresses, columns and fatigue. Theories of failure. Shaft design, deflections of shafts with nonuniform moments of inertia involving computer verification. Antifriction bearings, engineering materials, helical compression springs. Small mechanical component and system designs.

ETME 3223. Machine Design II. (3) Prerequisite: ETME 3213. A continuation of ETME 3213 with emphasis on new methods of problem solving and opportunities to integrate previously attained skills and knowledge into the design and optimization of small machine systems. (*On demand*)

ETME 3232. Senior Design Project I. (2) Prerequisites: ETME 3113, 3133, and 3143. Corequisite or prerequisite: ETME 3213 or permission. First of a two-semester course sequence in which each student proposes and implements a senior-level design project which demonstrates abilities as developed by the coursework taken thus far. Each student uses project planning techniques to complete a project proposal and plans and makes substantial progress toward implementation in the first semester and completes the project, including design evaluation during the second semester. One class hour and three lab hours per week.

ETME 3242. Senior Design Project II. (2) Prerequisite: ETME 3232. Pre- or corequisite: ETME 3163. Second of a two-semester course sequence in which each student proposes and implements a senior-level design project which demonstrates abilities as developed by the coursework taken thus far. Each student uses project planning techniques to complete a project proposal and plans and makes substantial progress toward implementation in the first semester and completes the project, including design evaluation during the second semester. One class hour and three lab hours per week.

ETME 3244. Applied Heat Transfer. (3) Prerequisites: ETME 3133. Basic principles of heat transfer. Theory and applications of conduction, free and forced convection and radiation heat transfer. Heat exchangers and heat transfer measurement. *(Fall)*

ETME 3251. Instrumentation Laboratory. (1) (W) Prerequisite or corequisite: ETME 3163. Practice in the use of the various instrumentation devices studied in ETME 3163.

ETME 3252. Thermodynamics and Heat Transfer Laboratory. (1) (W) Prerequisite or corequisite: ETME 3143. Experimentation involving the fundamental principles of thermodynamics and heat transfer, as applied to internal combustion engines, steam engines, engine dynamometers, refrigeration and heat pumps, solar energy systems, and heat exchangers. Three laboratory hours per week.

ETME 3263. Fluid Power. (3) Prerequisite: ETME 3133. Mechanical and fluid power and the conversion of one to the other. Components and system efficiencies including those consisting of cascaded components. Performance evaluation of such hydraulic components as pumps, motors, valves and metering devices. Viscosity, bulk modulus, noise, optimum performance and system design will be considered. *(On demand)*

ETME 3273. Air Conditioning Systems. (3) Prerequisite: ETME 3143. Functions and operating characteristics of the major components of refrigerating machines, heat pumps, boilers, furnaces, solar collectors, heat exchangers, fans and pumps. Emphasis on sizing, economics and performance characteristics. Includes coverage of psychometric principles and fan and pump laws. *(On demand)*

ETME 3283. Modern Techniques in Energy Conservation and Utilization. (3) Prerequisite: ETME 3143 or permission of the instructor. Survey of current topics that may include solar energy, basic nuclear reactor technology, ammonia-based Rankine cycle, absorption refrigeration cycle, heat pump cycle, techniques for energy conservation in new construction and techniques for retrofitting existing energy utilization systems. *(On demand)*

MANUFACTURING ENGINEERING TECHNOLOGY (ETMF)

ETMF 3111. Manufacturing Processes. (3) Capabilities, limitations, and operating characteristics of families of machine tools and processes; casting, cutting, forming, joining, fabrication, and inspection machinery. (*On demand*)

ETMF 3113. Fundamental of Optics. (3) Prerequisite: algebra, trigonometry, plane geometry, and physics. A phenomenological introduction to applied optics; interactions between light and materials; properties of light; lenses and mirrors; simple optical systems; interference and diffraction; introductions to optical fibers, lasers, and holography. (*On demand*)

ETMF 3114. Thin Films and Optical Coatings. (3) Prerequisite: algebra, trigonometry, plane geometry, and physics. Vacuum technology, process controls, and special techniques used in the fabrication of thin films and the surfaces on which they are prepared; ways in which the optical tribological, and electronic industries utilize these structures in their products. (*On demand*)

ETMF 3131. Computer Integrated Manufacturing (CIM). (3) Automated manufacturing systems involving computers to monitor vendor input, process variations, component selection and routing, and test and evaluation of products. Applications involving integration of computer aided design (CAD) systems with computer aided manufacturing (CAM) systems. (*On demand*)

ETMF 3141. Industrial Applied Optical Systems. (3) Prerequisite: ETGR 3171. The applications of electro-optical technology in manufacturing and industrial systems is investigated. The fundamentals of applied optics, laser theory and semi-conductor optical devices will be reviewed. (*On demand*)

ETMF 3141L. Applied Optical Systems Laboratory. (1) Corequisite: ETMF 3141. Applications of electro-optical technology in manufacturing systems. Laboratory experiments demonstrating the use of lasers in the following manufacturing and industrial applications will be performed: cutting, machining, welding, measurement, marking, and control of processes; machine vision systems, sorting, process control, and real-time quality control; bar code systems; optical character recognition; optical data transmission. (*On demand*)

ETMF 3153. Optics Laboratory. (2) Prerequisite or corequisite: ETMF 3113. Experiments designed to illustrate properties of light and optical systems; reflection and refraction; lenses and lens systems; optical instruments; interference and diffraction; polarized light; laser principles. (*On demand*)

ETMF 3181. Digital Process Control. (3) Prerequisite: ETMF 3164. Applications and programming of microprocessors and programmable controllers for control of manufacturing processes. Interfaces with sensors, actuators, and computer systems. Includes classroom and laboratory demonstrations. (*On demand*)

ETMF 3211. Topics in Precision Manufacturing. (3) Senior seminar in selected areas of modern production

of both conventional and micro-miniaturized products; surface mount technology for electronic components; manufacturing in the clean room environment; metrology; manufacture of micro-miniature mechanical systems; vacuum coating and plating systems; systems for automatic process control and product inspection. (*On demand*)

ETMF 3251. CIM Laboratory. (2) (W) Experiments with computer control of processes, including numerical control and robotics. Measurement of physical variables for monitoring, controlling, and testing production operations. Application of microprocessors and micro computers to system control and status reporting. One class hour, three lab hours per week. *(On demand)*

ETMF 3490. Manufacturing Engineering Technology Practicum. (0) Directed individual study in a selected area of Manufacturing Engineering Technology exploring the practical applications and practices in industry or research. (*On demand*)

EXERCISE SCIENCE (EXER)

EXER 1099. Topics in Games/Exercise/Sports. (1) Specialized topics or innovations in games, exercise and sports. May be repeated for credit as topics vary. *(On demand)*

EXER 1201. Foundations of Physical Conditioning. (1) The application and basic science of physical training programs designed to improve and maintain physical fitness. *(Fall, Spring)*

EXER 1202. Weight Training. (1) Mechanics and programming of weight training. *(Fall, Spring, Summer)*

EXER 1203. Fencing. (1) The skills and rules of the sport of fencing. *(On demand)*

EXER 1204. Aerobic Fitness. (1) Exercise designed to develop and maintain physical fitness through aerobic activity to music. *(Fall, Spring)*

EXER 1206. Adaptive and Developmental Physical Education. (1) Prerequisite: permission of the instructor. Prescribed ameliorative exercises adapted to individuals with special needs, capacities and interests. *(On demand)*

EXER 1208. Walk, Jog, Run. (1) Principles of walking, jogging and running as modes for improving and maintaining cardiovascular health and physical fitness. *(Fall, Spring)*

EXER 1209. Step Aerobics. (1) Physical fitness training emphasizing aerobic conditioning via variations and combinations of step patterns on adjustable exercise benches. *(Fall, Spring)*

EXER 1210. Beginning Swimming. (1) For weak swimmers or nonswimmers. Instruction in water safety fundamentals, basic body positioning, maneuvering in water, and traveling skills, including basic strokes. *(Fall, Spring)*

EXER 1211. Intermediate Swimming. (1) Emphasis on gaining competency in at least four basic strokes and increasing endurance. Instruction in water safety, non-swimming rescues and lap swimming for fitness. *(Fall, Spring)*

EXER 1215. Aquatic Fitness. (1) Principles of safety and effectiveness of aquatic exercise as a mode for improving and maintaining general health and physical fitness. *(Spring)*

EXER 1220. Beginning Tennis. (1) The rules, basic skills and strategy. *(Fall)*

EXER 1222. Racquet Sports. (1) Basic skills, tactics, safety and rules of racquetball, court and table tennis, squash and badminton. *(Spring)*

EXER 1223. Beginning Badminton. (1) The rules, basic skills and strategy. *(On demand)*

EXER 1231. Introduction to Outdoor Adventure. (1) An introduction to outdoor adventure through participation in a variety of weekend outdoor trips offered by Venture. Discussions and written reflection will expand students' sense of self, and their connection with others and with the natural environment. A special fee will be charged to cover the costs of the weekend trips. *(Fall, Spring)*

EXER 1232. Orienteering. (1) Introduction of off trail navigation with emphasis in the use of topographic maps, compasses, and route finding for wilderness travel; and the sport of competitive orienteering. Weekly class and 1 or 2 Saturday meets. *(Spring) (Alternate years)*

EXER 1233. Rock Climbing. (1) Introduction to rock climbing with emphasis on belaying and safety systems, climbing techniques, and the metaphorical and psychological aspects of climbing. Course will include: classroom sessions, use of indoor climbing wall, and weekend trips to outdoor climbing sites. A special fee will be charged to cover the costs of the weekend trips. *(Fall, Spring)*

EXER 1234. Canoeing. (1) Prerequisite: Successful completion of water safety test. Introduction to canoeing on flat water and white water emphasizing basic strokes, river reading, and boating safety. 10 classroom sessions and 2 weekend days. *(Spring)*

EXER 1235. Challenge Course Activities. (1) Immersion in a developmental small group team experience using a wide variety of challenge course activities (i.e. ropes course, trust exercises, group initiatives.) The focus is on expanding students' self knowledge and understanding of how to work effectively with and lead others. *(Spring)*

EXER 1240. Beginning Golf. **(1)** The grip, stance, stroke, use and selection of clubs, rules and etiquette. *(Fall, Spring)*

EXER 1242. Archery. **(1)** The fundamental skills and selection, care and repair of equipment. *(On demand)*

EXER 1250. Volleyball. **(1)** The rules, fundamental skills and strategies. *(Fall, Spring)*

EXER 1262. Recreational Dance. **(1)** Social and partner dancing in a recreational setting. Basic knowledge of dance steps, dance music, style, leading/following techniques, plus current popular variations. *(On demand)*

EXER 1263. Body Shaping. **(1)** Selected methods of resistive exercises used to shape, tone and define musculature in a gymnasium setting. *(Fall, Spring)*

EXER 2150. Introduction to Kinesiology. (3) Crosslisted as ATRN 2150. Prerequisite: Must be a PKNS major. Introduction to the study of exercise science relative to philosophies, practices, work settings, trends, knowledge bases, skills and licensures. Must be a PKNS major for the Fall and Spring semesters. Open to all students during summer session. (*Spring, Summer*)

EXER 2212. Lifeguard Training. (2) Prerequisite: Swim 500 yards using a combination of front crawl and breast stroke continuously, swim 20 yards, dive to 10 feet and retrieve a dive brick, return. The knowledge and skills associated with lifeguarding. Qualifying students will receive the American Red Cross Lifeguarding Certificate. *(Fall, Spring)*

EXER 2213. Water Safety Instruction. **(3)** Prerequisite: Competency in all basic swimming strokes. Techniques used in teaching people aquatic skills. Qualifying students will receive the American Red Cross Water Safety Instructor's rating. *(Spring)*

EXER 2218. Scuba Diving Laboratory. (1) Corequisite: EXER 2219. Prerequisite: appropriate swimming ability to current scuba standards as prescribed by recognized scuba certifying organizations. The skills associated with the use of self-contained underwater breathing apparatus. There is a course fee. *(Fall, Spring, Summer)*

EXER 2219. Scuba Diving. (2) Corequisite: EXER 2218. The science associated with the use of self-contained underwater breathing apparatus. Students who demonstrate the required knowledge and skills may request licensure as an open water SCUBA diver. There is a $60 course fee. *(Fall, Spring, Summer)*

EXER 2220. Advanced Scuba Diving. (1) Prerequisite: Certified Open Water Diver. The knowledge and skill required for underwater navigation, search and recovery, limited visibility diving and deep diving. There is a $35 course fee. *(Fall, Spring, Summer)*

EXER 2230. Wilderness Experience. **(3)** Corequisite: EXER 2231. This course is, in essence, a semester-long Outward Bound experience. It uses a variety of group experiences and adventure activities, including backpacking trips and challenge courses. The goal is a deeper understanding of oneself and of life itself through participation in an in-depth group experience. Significant attention is given to self reflection. Field experiences during class and two weekend trips. *(Fall)*

EXER 2231. Wilderness Experience Lab. **(1)** Corequisite: EXER 2230 . The lab will focus on the skills and knowledge necessary for planning and conducting one's own backpacking trips. The lecture course (EXER 2230) uses the experiences from the lab to increase self knowledge. Two weekend backpacking trips are included. A special fee will be charged to cover the costs of the trips. *(Fall)*

EXER 2232. Wilderness Trip Leading. **(2)** Prerequisite: EXER 1231 or EXER 2230 or permission of instructor. The focus is on the broadly accepted skills and knowledge necessary for leading group adventure trips. Includes spring break backpacking trip(s) and class room sessions. After successful completion of this course students will be eligible to assist with Venture trips. A special fee will be charged to cover the costs of the trips. *(Spring)*

EXER 2234. Challenge Course Facilitation. **(2)** Prerequisite: EXER 1235 or EXER 2230 or permission of instructor. Focus on the basic skills and knowledge necessary for safely and effectively leading groups through challenge courses. In addition to class room sessions, weekend days at the Team Challenge Course and observation/ apprenticing of actual Venture programs are required. *(Spring)*

EXER 2235. High Ropes Course Facilitation. **(2)** Prerequisite: EXER 1235, 2230 or 2234 or permission of instructor. Focus on both the technical and facilitation skills and the knowledge necessary for safely and effectively leading groups through high ropes courses. In addition to class room sessions, weekend days at the High Team Challenge Course and observation/ apprenticing of actual Venture programs are required. *(Fall)*

EXER 2251. Introduction to Human Movement: A Personal Approach. **(3)** Selected methods of observing and analyzing human movement via self-observation and study. *(On demand)*

EXER 2290. First Aid: Responding to Emergencies. (3) Crosslisted as ATRN 2290. The knowledge and skills associated with being a first responder incase of injury or sudden illness. Qualifying students may receive certifications in: Responding to Emergencies-First Aid, Community CPR, Preventing Disease Transmission (Bloodborne Pathogens Training) and Automated External Defibrillator (AED). *(Fall, Spring, Summer)*

EXER 2294. Care and Prevention of Athletic Injuries. (3) Crosslisted as ATRN 2294. Prerequisite or

corequisite: EXER 2290 or ATRN 2290, and must be a PKNS major. Focus on health care competencies necessary for the prevention, emergency management and acute care of athletic-related injuries. Also provides an introduction to the role of the Certified Athletic Trainer in providing health to the physically active individual.

EXER 2295. Care and Prevention of Athletic Injuries Laboratory. (1) Crosslisted as ATRN 2295. Prerequisite: Must be a PKNS major. Corequisite: EXER or ATRN 2294. Focus on the psychomotor competencies and clinical proficiencies necessary for the prevention, emergency management and acute care of athletic-related injuries. *(Spring)*

EXER 2298. Applied Kinesiology. (3) Crosslisted as ATRN 2298. Prerequisite: BIOL 1273, BIOL 1273L, and PKNS major. The study of musculoskeletal anatomy and how it relates to normal function of the human body. *(Spring)*

EXER 3099. Movement Problems/Topics. (1-6) Prerequisite: permission of instructor. Movement problems/topics chosen by the student which relate to special areas of interest. May be repeated for credit with approval of instructor. *(Fall, Spring, Summer)*

EXER 3100. Exercise Leadership and Instruction. (3) Prerequisite or corequisite: EXER 1201 and an EXER major. This course introduces principles and methods of leadership. Includes programming and participation, teaching methods, assessment, supervision, and leadership for various types of individual and group health and fitness programs. This course will also review basic exercise science principles and provide the student with the knowledge and skills to lead a wide variety of related activities. *(Fall)*

EXER 3152. Health and Safety Issues in Middle and Secondary Schools. (2) Prerequisites: Junior or senior status, EDUC 2100 and SPED 2100. Provides the pre-service teacher with the curricular content of health and safety in grades 6-12. Focuses on knowledge and behaviors conducive to health and safety. *(Fall, Spring, Summer)*

EXER 3200. Adaptive Physical Education. (3) Prerequisite: admission to teacher education program. Study of movement potentials and limitations of mentally and physically impaired children and teaching skills necessary to use movement as a medium for physical, social and emotional development. *(On demand)*

EXER 3228. Elementary Physical Activity. (2) Prerequisites: EDUC 2100, 3120, and SPED 2100 or admission into the Teacher Education Program. Integrating physical education with elementary school curriculums. (7 ½ week course) *(Fall, Spring, Summer)*

EXER 3229. Elementary Health Education. (2) Prerequisites: Junior or senior status, EDUC 2100, 3120, and SPED 2100. Orientation of the elementary specialist to content and curriculum appropriate for teaching health education in grades K-6. (7 ½ week course) *(Fall, Spring, Summer)*

EXER 3233. Teaching Children Movement. (3) Prerequisites: EDUC 2100, 2110 and 2150. Study of movement and physical activities as applied in the elementary school program. Emphasis on teaching lessons at a local elementary school. *(On demand)*

EXER 3251. Human Movement. (3) Prerequisite: EXER 2251 or permission of instructor. Analysis and application of basic movement in specific sport, dance, gymnastic, and aquatic skills. *(On demand)*

EXER 3260. Nutrition for the Physically Active. (3) Crosslisted as ATRN 3260. Prerequisite: must be a EXER or ATRN major. Corequisite: EXER 3280. Introduction to principles and concepts of nutrition and how dietary practices affect health and disease. *(Fall)*

EXER 3280. Exercise Physiology. (3) Crosslisted as ATRN 3280. Prerequisites: must be a EXER or ATRN major. Physiological foundations of programming exercise for health fitness with emphasis on acute physiological responses to bouts of exercise and chronic physiological responses and adaptations to repeated exercise and programs of exercise.

EXER 3281. Exercise Physiology Laboratory. (1) (W) Crosslisted as ATRN 3281. Corequisite: EXER 3280 Laboratory experiences and assignments to enhance the lecture material presented in EXER 3280. *(Fall)*

EXER 3285. Conditioning for Maximum Sports Performance. (3) Prerequisite: EXER 2290 or permission of instructor. A study of biomechanical and physiological principles of conditioning for maximum sports performance. Two lecture and three laboratory hours. *(On demand)*

EXER 3286. Exercise Testing. (3) Crosslisted as ATRN 3286. Prerequisite: Successful completion of EXER 3280 or ATRN 3280 and EXER 3281 or ATRN 3281. Corequisite: EXER 3287. This course is designed to teach methods and protocols for collecting and interpreting information collected on individuals concerning various fitness parameters for the future development of individual and group conditioning programs. *(Spring)*

EXER 3287. Exercise Testing Lab. (1) (W) Crosslisted as ATRN 3287. Corequisite: EXER 3286. Practitioner lab in the use of appropriate data collection methods and protocols. *(Spring)*

EXER 4121. Pharmacology for the Physically Active. (3) Crosslisted as ATRN 4121. Prerequisite: EXER 3260 or ATRN 3260. The course entails an examination of the historical aspects of use, abuse and addiction within the realm of health and human performance. This course will expose students to a wide variety of drug issues and the unique use and abuse patterns of individuals in the exercise science arena. *(Fall)*

EXER 4130. Applied Nutrition. (3) Principles of nutrition, dietary guidelines, dietary relationships to diseases and health, special populations, computerized dietary analysis. *(2 year cycle)*

EXER 4132. Lifetime Weight Management. (3) Prerequisites or corequisites: EXER/ATRN 3260 and EXER 4286. Examines factors in obesity and weight control, emphasizing techniques in behavior modification and lifestyle change for effective weight management. (7 ½ week course) *(Spring)*

EXER 4134. Assessment and Development of Physical Fitness. (3) Prerequisite: permission of the instructor. Study of responses and adaptations to exercise, assessment techniques, exercise prescription, leadership and programming. *(2 year cycle)*

EXER 4204. Perceptual Motor Development. (3) Theories, principles and research related to perceptual motor development of children. *(On demand)*

EXER 4205. Perceptual Motor Learning. (3) Prerequisite or corequisite: EXER 4204 or permission of instructor. Perceptual-motor learning of children and its effect on school performance and the relationships of perceptual-motor development to reading, writing and mathematics. *(On demand)*

EXER 4208. Perceptual Motor Therapy. (3) Prerequisite: EXER 4205 or permission of the instructor. Observation of and evaluation and therapy for children with perceptual-motor delays. *(On demand)*

EXER 4210. Perceptual Motor Therapy Laboratory. (1) Prerequisite/corequisite EXER 4204, 4205, or 4208. *(On demand)*

EXER 4211. Perceptual Motor Therapy Laboratory. (2) Prerequisites/corequisite: EXER 4204 or 4208. *(On demand)*

EXER 4212 . Perceptual Motor Therapy Laboratory. (3) Prerequisite: EXER 4208, 4210, or 4210 and permission of instructor. Supervised observation, testing and clinical teaching of children with perceptual-motor dysfunction.

EXER 4286. Exercise Prescription. (3) Crosslisted as ATRN 4286. Prerequisite: Successful completion of EXER 3286 or ATRN 3286 and EXER 3287 or ATRN 3287. This course is designed to teach the interpretation and prescription of exercise and various fitness parameters for programs with healthy populations and general clinical populations. *(Fall)*

EXER 4293. Biomechanics. (3) Crosslisted as ATRN 4293. Prerequisites: EXER 3280 or ATRN 3280. Corequisite: EXER 4294. Mechanical and anatomical kinesiology as it relates to human movement with emphasis on anatomical structures, mechanics, sport skill analysis, and related injuries. Requires preparation and presentation of a paper on a biomechanical analysis of a sport movement, exercise or injury. *(Fall)*

EXER 4294. Biomechanics Lab. (1) Crosslisted as ATRN 4294. Corequisite: EXER 4293. Laboratory experiences and assignments to enhance the lecture material presented in EXER 4293. One laboratory period of two hours a week or two one hour labs. *(Fall)*

EXER 4490. Exercise Science Senior Internship. (6-15) Prerequisites: Completion of all other courses for the major. Application of acquired knowledge and skills in practitioner settings. Each 3 hours of credit requires a minimum of 8 contact hours per week at the internship site. *(Fall, Spring, Summer)*

EXER 4660. Practitioner Seminar. (3) (W) (O) Prerequisites: EXER 4121, EXER 4286 and EXER 4293. Must be taken during the term closest to internship (EXER 4990). Emphasis is on state of the art health enhancement practices. (7 ½ week course) *(Spring)*

FILM (FILM)

FILM 2201. Introduction to Film. (3) Introduction to elements of film needed for analyzing and writing about film. Required for Minor in Film Studies. Offered every semester.

FINANCE (FINN)

FINN 3000. Topics in Finance. (3) Prerequisite: junior standing. Topics from the area of Finance. The course may be repeated for credit. (*On demand*)

FINN 3120. Financial Management. (3) Prerequisites: MATH 1120, STAT 1220; ACCT 2121, 2122, ECON 2101, 2102; INFO 2130; Business major, junior standing. Principles and problems of financial aspects of managing capital structure, least-cost asset management, planning and control. Computer application will be included where appropriate. *(Fall, Spring)*

FINN 3220. Financial Analysis. (3) Prerequisite: FINN 3120. This course offers an introduction to the theory and practice of corporate valuation. Topics covered include financial statement analysis, discounted cash flow valuation, ratio analysis, constructing pro-forma financial statements, earnings forecasting, and basic statistical methods important in finance. *(Yearly)*

FINN 3221. Financial Institutions and Markets. (3) Prerequisite: FINN 3120. A study of financial institutions and money and capital markets which considers their roles in the intermediation process. Special emphasis is focused on the comparative financial policies of financial institutions considered in the context of their market environments. *(Yearly)*

FINN 3222. Investments. (3) Prerequisite: FINN 3120. Major topics are security analysis and portfolio management. The viewpoint is that of the investment professional concerned with evaluation of individual

securities and management of security portfolios. (*Fall, Spring*)

FINN 3223. International Financial Management. (3) Prerequisite: FINN 3120. Viewpoints are those of the senior financial officer of a corporation involved in international business and of the international officer of a commercial bank. Topics include the financing of exports and imports, financing of foreign operations, problems of foreign exchange rates and the impact of accounting procedures on financial management. *(Yearly)*

FINN 3224. Applied Business Finance. (3) Prerequisite: FINN 3120. Case studies of the theories and techniques of financial management as they relate to the goal of the financial manager; the maximization of the value of the firm. Topics include financial planning, valuation, financial instruments, financial structure, and capital budgeting. *(On demand)*

FINN 3225. Commercial Bank Management. (3) Prerequisite: FINN 3120. A study of sound and efficient techniques for the management of commercial banks. Topics include industry structure, administrative organization, and management of assets, liabilities and capital. *(Yearly)*

FINN 3226. Financial Theory and Practice. (3) Prerequisite: FINN 3120. Modern financial theory and its application, including risk theory, market equilibrium asset pricing models, efficient market theory, capital structure theory and applications (including issues surrounding financial distress and bankruptcy), dividend policy, agency problems, informational asymmetry, advanced topics in capital budgeting, and leasing. *(Fall, Spring)*

FINN 3261. Real Estate Finance (3) Prerequisite: FINN 3120. This course covers the fundamentals of real estate finance and investment and includes the topics of: real estate capital markets, mortgage markets, mortgage securitization, real estate contracts and leases, investment analysis, valuation and appraisal, return and risk considerations, and the effects of debt financing, taxation and government regulations on real estate investment. *(Yearly)*

FINN 3271. Principles of Risk Management and Insurance. (3) Prerequisite: INFO 2130, junior standing, business major or permission of the department. A study of the different types of nonspeculative risks faced by individuals and businesses and the possible alternative methods of treating such risks. An examination of the specific application of these methods with regard to life, health, property, casualty, and liability contracts. *(Fall, Spring)*

FINN 3272. Life Insurance and Professional Financial Planning (3) Prerequisite: INFO 2130, junior standing, business major or permission of the department. This course explains the uses of life insurance, annuities, health insurance and Social Security in the financial planning context. It explains the integration of social security benefits, employer-provided benefits, and individually purchased life insurance and investments into comprehensive financial plans. Students successfully completing this course should understand the need for the main techniques of financial planning in contemporary U.S. society. *(Fall, Spring)*

FINN 3273. Property and Casualty. (3) Prerequisite: INFO 2130, junior standing, business major or permission of the department. Involves an analysis of the needs of business and individuals for property and casualty insurance and the nature of available coverage. An examination of property and casualty insurance products is included, emphasizing the study of case law, the use of contracts and contract language underwriting procedures, actuarial science, reinsurance, accounting, non-insurance risk transfer, and claims handling. *(Fall)*

FINN 3275. Advanced Risk Management. (3) Prerequisites: FINN 3271 (or permission of Department Chair). Provides an in depth analysis of techniques that firms can use to handle non-speculative pure risks. Risk handling devices and how they are applied to business problems are discussed. Some of the techniques examined include self-insurance, captives, financial instruments and retention. Included is an analysis of loss data and how it can be utilized to select a risk handling technique. *(Fall, Spring)*

FINN 3276. Employee Benefits. (3) Prerequisites: INFO 2130, junior standing, and a business major. Provides an analysis of group plans (e.g., medical, life, disability, and retirement), stock options, profit sharing plans and statutory benefits (e.g., workers' compensation and social security). Includes a review of legislation affecting these plans. Non-traditional plans (e.g., child care, flex time, and wellness programs) are also examined. *(Spring)*

FINN 3277. Legal Aspects of Insurance. (3) Prerequisite:-FINN 3271. Provides an in-depth analysis of the impact that statutes, regulations and litigation have on risk management and insurance. Will examine the impact the courts have had on claims handling. *(On demand)*

FINN 3500. Cooperative Education and 49ership Experience. (0) Enrollment in this course is for the University cooperative education and 49ership students during each semester they are working in a position. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (*Fall, Spring*)

FINN 3800. Directed Study. (1-3) Prerequisites: Permission of the department and junior standing. Enrollment granted only by permission of the faculty

with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. (*On demand)*

FINN 4158. Student Managed Investment Fund I. (3) Prerequisites: FINN 3120 and FINN 3222. Management of an actual portfolio consisting of a portion of the University's Endowment Fund. Admission is by permission of instructor. Students selected for the course are required to take FINN 4159. *(Fall)*

FINN 4159. Student Managed Investment Fund II. (3) Prerequisites: FINN 3120 and FINN 3222. Management of an actual portfolio consisting of a portion of the University's Endowment Fund. Admission is by permission of instructor. Student cannot enroll in this course without successfully completing FINN 4158. *(Spring)*

FOREIGN LANGUAGE (FORL)

Languages in addition to those offered in the regular program may be available on demand. Labs may be required.

FORL 1201. Elementary Foreign Language. (3-4) Prerequisite: permission of the Department. Fundamentals of grammar and phonetics, reading, writing and conversation of a selected language. *(On demand)*

FORL 1202. Elementary Foreign Language. (3-4) Prerequisite: FORL 1201 or permission of the Department. Continuation of 1201. *(On demand)*

FORL 2201. Intermediate Foreign Language. (3-4) Prerequisite: FORL 1202 or permission of the Department. Grammar review, conversation, composition and readings based on the culture and civilization. *(On demand)*

FORL 2202. Intermediate Foreign Language. (3-4) Prerequisite: FORL 2201 or permission of the Department. Grammar, conversation, composition and readings based on students' needs. *(On demand)*

FORL 3050. Topics in Language, Literature and Culture. (3) (W) Studies in a selected field of interest. May be repeated for credit. (*On demand*)

FORL 3160. European Cinema. (3) (W) (O) Prerequisites: Sophomore standing and ENGL 1102 or equivalent. Introduction to films of the various national cinemas of Europe and strategies for analyzing and discussing film critically and effectively. Lectures, discussions, viewing films, writing assignments, reviews, critiques, and analyses. (*Spring, Fall*)

FORL 3201. Advanced Foreign Language I. (3) Prerequisite: FORL 2202 or permission of the Department. Review of grammar and guided conversation on prepared topics. Emphasis on spoken language. *(On demand)*

FORL 3202. Advanced Foreign Language II. (3) Prerequisite: FORL 3201 or permission of the Department. Review of grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. *(On demand)*

FORL 3800. Directed Individual Study. (1-3) Prerequisite: Permission of the Department; normally open only to foreign language majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (*On demand*)

FORL 4050. Topics in Foreign Language. (3) Prerequisite: Senior standing or permission of the Department. Studies in a selected field of interest. May be repeated for credit with change of topic. *(On demand)*

FORL 4200. Secondary Methods-Foreign Languages. (3) Prerequisite: Completion of at least two 3000-level courses or equivalent in the target language, or permission of the Department. Current trends and practices in teaching foreign and second languages in the middle school and high school, with emphasis on practical applications. Addresses state-mandated competencies. Required for licensure in the teaching of foreign language and recommended for licensure in teaching English as a Second Language. (*Fall) (Evenings*)

FORL 4201. Foreign Languages in the Elementary School Methods. (3) Prerequisite: completion of at least two 3000-level courses or equivalent in the target language, or permission of the Department. Current trends and practices in teaching foreign and second languages in the elementary school, with emphasis on practical applications. Addresses state-mandated competencies. Required for licensure in the teaching of a foreign language and recommended for licensure in teaching English as a Second Language. (*Spring) (Evenings*)

FORL 4690. Senior Seminar. (1) Prerequisites: four or more courses at the 3000 or 4000 level in the major or permission of the Department. Survey of career options for foreign language majors, directed professional development (preparation of resume and portfolio), and completion of departmental required assessments in the areas of speaking, reading, writing, grammar, and content knowledge of the major. *(Fall, Spring) (Pass/No Credit)*

FORL 4800. Directed Individual Study. (1-3) Prerequisite: permission of the Department; normally open only to foreign language majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (*On demand*)

FRENCH (FREN)

FREN 1050. Special Approaches to the Study of French. (1-6) Course may be repeated with change of topic. (*On demand*)

FREN 1201. Elementary French I. (4) For students with limited or no previous experience in French. First course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in French. *(Fall, Spring, Summer) (Evenings)*

FREN 1202. Elementary French II. (4) Prerequisite: FREN 1201 or equivalent. Second course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in French. *(Fall, Spring, Summer)(Evenings)*

All 2000-level courses except for FREN 2202, FREN 2209, and FREN 2210 fulfill the language requirement of non-majors who are required to take one intermediate-level language class.

FREN 2050. Topics in French I. (1-3) Course may be repeated with a change in topic. *(On demand)*

FREN 2200. French for Reading Knowledge. (3) Prerequisite: FREN 1202 or equivalent. Review of French grammar with emphasis on developing reading skills. Taught in English. Does not count for major or minor credit. (*Fall and/or Spring*).

FREN 2201. Intermediate French I. (3) Prerequisite: FREN 1202 or equivalent. Review of grammar, with reinforcement and expansion of competence in speaking, understanding, reading, and writing, in a cultural context. *(Fall, Spring)*

FREN 2202. Intermediate French II. (3) Prerequisite: FREN 2201 or permission of the Department. Conversation and composition based on readings in French literature and culture. Film and slide presentations. (*Fall, Spring*)

FREN 2207. French Phonetics. (3) Prerequisite: FREN 1202 or permission of the Department. Study of the sounds of the French language, their production and representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. (*Fall*)

FREN 2209. French Civilization. (3) (W) Conducted in English. No knowledge of French required. Open to majors and non-majors for elective credit. A study of the French people, past and present, with emphasis on cross-cultural contrasts in attitudes and values. (*Fall, Spring*)

FREN 2210. Introduction to Business French. (3) Prerequisite: FREN 2201or permission of the Department. Introduction to spoken and written language of the French-speaking business world. Acquisition of and practice with general commercial terminology used in French for such functional business areas as economics, management, marketing finance, and import-export. (Alternate to FREN 2202 only for Certificate in Business French) *(Spring)*

FREN 3050. Topics in French. (1-3) Course may be repeated with change of topic. (*On demand*)

FREN 3201. French Grammar and Conversation. (3) (O) Prerequisite: FREN 2202 or permission of the Department. Review of French grammar and guided conversation on prepared topics. Emphasis on spoken French. (*Fall*)

FREN 3202. French Grammar and Composition. (3) Prerequisites: FREN 2202 and 2207 or concurrent enrollment in FREN 2207. FREN 3201 recommended. Review of French grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. (*Spring*)

FREN 3203. Introduction to French Literature. (3) Prerequisite: FREN 2202. Corequisite: FREN 3202 or permission of the Department. Development of techniques for literary study through analysis of selected major works in French literature. Readings, discussions, presentations, and *explications de texte*. *(Spring)*

FREN 3209. France Today. (3) Prerequisite: FREN 3201 or 3202 or permission of the Department. Contemporary France: institutions, society, culture. *(Fall)*

FREN 3800. Directed Individual Study. (1-3) Prerequisite: permission of the Department; normally open only to French majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (*On demand*)

FREN 4003. Studies in French Literature. (3) Prerequisites: FREN 3201, 3202, and 3203 or permission of the Department. Course may be repeated with change of topic. *(On demand)*

FREN 4005. Studies in the French Language. (3) Prerequisites: FREN 3201 and 3202, or permission of the Department. Course may be repeated with change of topic. (*On demand*)

FREN 4007. Studies in French Culture and Civilization. (3) Prerequisites: FREN 3201, 3202, and 3209, or permission of the Department. Course may be repeated with change of topic. (*On demand*)

FREN 4050. Topics in French. (1-3) Prerequisites: Junior standing; English 1102 or equivalent if taught in English. May be taught in French or English. Will not count toward the major. Course may be repeated with change of topic. *(On demand)*

FREN 4120. Advanced Business French I. (3)

Prerequisites: FREN 2210, 3201 and an additional 3000- or 4000-level course (3202 recommended), or permission of the Department. Advanced studies in Business French, with intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as economics, management, and marketing. *(On demand)*

FREN 4121. Advanced Business French II. (3) Prerequisites: FREN 2210, 3201, and an additional 3000-or 4000-level course (3202 recommended), or permission of the Department. Advanced studies in Business French, with intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as marketing, finance, and import-export. *(On demand)*

FREN 4201. Survey of French Literature I. (3) Prerequisite: FREN 3203. The major literary movements from the Middle Ages to the Enlightenment, with sample texts. Emphasis on continuity and change. (*Fall*)

FREN 4202. Survey of French Literature II. (3) Prerequisite: FREN 3203. The major literary movements from the Enlightenment to the contemporary period, with sample texts. Emphasis on continuity and change. (*Spring*)

FREN 4410. Professional Internship in French. (1-6) Prerequisites: FREN 3201 and 3202, or equivalent and permission of the department. Faculty-supervised field and/or research experience in a cooperating professional (e.g., business) or community organization. Contents of internship based upon a contractual agreement among the student, department, and business or community organization. Offered on a *Pass/No Credit basis. (Fall, Spring, Summer)*

FREN 4800. Directed Individual Study. (1-3) Prerequisite: permission of the Department; normally open only to French majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (*On demand*)

GEOGRAPHY (GEOG)

GEOG 1101. World Regional Geography. (3) A world regional study which emphasizes the distinctly human responses of people to various geographic situations throughout the world. The nature and development of cultural regions will be studied. (*Fall, Spring, Summer) (Evenings*)

GEOG 1105. The Location of Human Activity. (3) An examination of factors which account for the locational characteristics of economic and other human activities. The locational decision-making process is examined as a means of understanding human spatial behavior. (*Fall, Spring, Summer*)

GEOG 2000. Topics in Geography. (1-4) Treatment of major topical or regional issues in Geography. May be repeated for credit as topics vary. *(On demand)*

GEOG 2100. Maps and Graphs. (3) A study of cartography and its essential processes, with particular emphasis on the map as a communication system, the effective communication of data by means of graphical symbols, map interpretation and discussion of map production techniques. (*Fall, Spring) (Evenings*)

GEOG 2101. Cartographic Laboratory. (1) Prerequisite or corequisite: GEOG 2100. The laboratory emphasizes thematic mapping and design. This includes basic map construction techniques, including desktop mapping with computers. Two hours of laboratory per week. (*Fall, Spring) (Evenings*)

GEOG 2105. Introduction to Economic Geography. (3) Examination of the spatial dimensions of economic activity, geographic organization and interaction of economic production, consumption, and exchange systems. Emphasis is placed on location-based factors and principles utilizing theoretical and empirical studies. A variety of geographic scales will be examined, from the local to the global. *(Spring)*

GEOG 2110. Introduction to Geographic Research. (3) Research design and resources in geographic research. Emphasis on spatial applications in summary statistics; spatial summaries, statistical hypothesis testing; sampling and estimation; association, correlation and regression. (*Fall, Spring) (Evenings*)

GEOG 2120. Geographic Information Systems: Survey of Applications and Techniques. (4) Covers the fundamentals of GIS technology and how it is being applied in such diverse fields as planning, marketing, criminal justice, political science, and engineering. Students will learn how to collect, organize, analyze, and display spatial data obtained from sources such as address geocoding, GPS, and WWW sites. Each student will complete a series of lab exercises that illustrate the typical steps in a GIS project. Three lecture hours, one two-hour lab per week. *(Fall, Spring)*

GEOG 2125. Business Applications of GIS. (3) Introduction to the uses of spatial data and the geographic information systems that handle them in basic business decision-making and research. Applications include geographic data presentation, consumer research, marketing, site selection and trade area analysis. Students are provided an introduction to key economic geography concepts, data availability, and experience executing GIS projects. This course is an acceptable prerequisite for GEOG 4120. *(Spring)*

GEOG 2140. Geography of North Carolina. (3) A survey of the cultural, economic, urban, environmental and physical landscape of North Carolina with an emphasis on understanding the complex geographical variety that exists within a dynamic Southern state. Historic, current and future geographic patterns will be explored. *(Spring) (On demand)*

GEOG 2150. Geography of Polar Regions. (3) Arctic and Antarctic regions, history of exploration, the physical environment and political significance. (*Yearly*)

GEOG 2155. Geography of the U.S. and Canada. (3) Geographic structure of the U.S. and Canada with emphasis on physical environment and patterns of human activities. (*Fall*)

GEOG 2160. The South. (3) The culture, environment, population and economy of the southeastern U.S.; emphasis on current trends and future implications. (*Yearly*)

GEOG 2165. Patterns of World Urbanization. (3) (O) Introduction to cities of the world including examination of cities within different culture areas as well as the internal structure of different cities within the context of traditional and innovative theories of development geography. (*Fall, Spring, Summer*)

GEOG 2200. Introduction to Urban Studies. (3) Crosslisted with URBS 2200. A survey course exploring the diverse perspectives and experience of North American Cities. Lectures and discussions will focus on the development, organization, function, and meaning of urban areas, as well as the multiple and complex relationships that exist between cities and the people who live and work within them. *(Fall, Spring)*

GEOG 3000. Topics in Regional Geography. (3) Examination of major geographical regions of the world. May be repeated for credit as topics vary. (*Yearly*)

GEOG 3100. The City and Its Region. (3) Study of the regional system of cities in terms of their size, spacing, historical evolution, functional relationships and future prospects. (*Fall, Spring*)

GEOG 3105. Geography of the Global Economy. (3) Examination of the globalization of economic activity with focus on the geographic patterns of international production, trade, and foreign direct investment and changes in these patterns resulting from actions by transnational corporations and nation states within a volatile technological environment. *(Spring)*

GEOG 3110. Urban Political Geography. (3) Spatial organization of metropolitan America. How metropolitan residents organize space into territorial units and the human, social and political ramifications of that organization. Spatial consequences of the most common modes of political, administrative and territorial organization. (*Alternate years*)

GEOG 3115. Urban Transportation Problems. (3) (W) Problems associated with moving goods, people and information in urban areas. Topics include mass transit and pollution problems. (*Alternate years*)

GEOG 3150. Manufacturing Geography. (3) Factors relating to the nature, locations and development of manufacturing industries. Emphasis upon classification of manufacturers, principal areas of manufacturing and the role of manufacturing in regional development. (*Spring) (Evenings*)

GEOG 3200. Land Use Planning. (3) Land use planning, with emphasis on basic planning processes, implementation techniques and strategies, and issues confronting contemporary urban and rural planning. (*Spring*)

GEOG 3205. Internal Structure of the City. (3) Integrative study of the spatial structure of cities with emphasis on land use patterns and models, transportation systems, residential concentrations, commercial activities and manufacturing zones. (*Fall, Spring, Summer*)

GEOG 3210. Regional Planning. (3) Introduction to regional planning strategies and approaches developed by regional planning agencies. Urban-regional planning relationships with emphasis on techniques used in regional analysis. (*Spring*)

GEOG 3215. Environmental Planning. (3) (W) Interaction and relationships between natural and human-made elements of the environment with emphasis on planning concepts and methodologies used in contemporary environmental planning. (*Fall*)

GEOG 3250. World Food Problems. (3) Magnitude, consequences, major causes and potential solutions to the world's food problems. (*On demand*)

GEOG 3260. Medical Geography. (3) Traditional aspects of medical geography including disease mapping, disease ecology and statistical association and more recent social scientific topics, including disease diffusion, health care facilities planning and spatial behavior. (*On demand*)

GEOG 3265. Behavioral Geography. (3) (W) Behavioral approach to environmental decision-making, personal space, room and building geography, consumer behavior, territoriality, perception of wilderness and natural hazards, activity space, and communication biases. (*Fall*)

GEOG 3500. Geography Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the Department's geography cooperative education and 49ership students during each semester that they are working. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. *(Fall, Spring, Summer*)

GEOG 3501. Geography Cooperative Education Seminar. (1) This course is required of geography cooperative education students in each semester following a work assignment for presentation of geography reports on the co-op learning experience. (*Fall, Spring, Summer*)

GEOG 3605. Geography of Europe. (W) (3) This course explores relevant issues in contemporary Europe. Through lecture and written work, the course examines current trends in European political unity, economic integration, national/ethnic conflict and environmental policy from a geographical perspective.

GEOG 4000. Selected Topics in Geography. (3) Prerequisite: Permission of instructor. An intensive study of topics in geography from such areas as urban, manufacturing, planning, retailing activity, transportation, and political geography. Topics vary from semester to semester. May be repeated for credit as topics vary. (*Yearly*)

GEOG 4040. Transportation Topics. (3) Prerequisite: Permission of Department. Investigation of special topics in transportation including: transit systems, mobility and travel patterns, land use/transportation interface, air pollution, and information systems. *(Spring) (Alternate years).*

GEOG 4101. Cartographic Techniques. (3) Prerequisite: GEOG 2100. Preparation of maps, figures and charts at a professional level of competence. Techniques to be emphasized include desktop mapping with computers, high resolution imagesetting output, color separation techniques which include computer separations as well as scribing and various related photographic processes. Two laboratories of three hours each per week. (*Spring*)

GEOG 4102. Cartographic Design and Map Construction. (3) Design process and basic map construction techniques with particular emphasis on the graphic elements of map design, planning map design, creating visual hierarchies, the uses of color, and basic mechanical color separation. (*Fall*)

GEOG 4103. Computer Mapping. (3) Prerequisites: GEOG 2100 and ITCS 1101 or 1214 and its lab, or permission of instructor. Automated methods of gathering, storing, manipulating and displaying spatial data. Emphasis on the use of existing software and the design and implementation of geographic data structures and algorithms. (*Fall*)

GEOG 4108. Sport, Place, and Development. (3) (W) Prerequisite: GEOG 1105. Examines sport and its impact on the landscape of cities and communities. Implications of sport are examined in terms of urban land use, urban social structure, markets, franchise movement and expansion, urban politics, its role in defining sense of place, and its impact on the development of communities and regions. *(Fall, Alternate years)*

GEOG 4120. Introduction to Geographic Information Systems. (4) Prerequisite: Permission of instructor. Development, current state-of-the-art and future trends in geographic information processing with emphasis on data gathering, storage, and retrieval, analytical capabilities and display technologies. A laboratory component will include development and completion of an applied GIS research project. Additional requirements for graduate credit. Three lecture hours, one two-hour lab per week. (*Yearly*)

GEOG 4130. Advanced Geographic Information Systems. (4) Prerequisite: GEOG 4120 or permission of instructor. Advanced GIS study with emphasis on (1) advanced skills for database development and management; (2) spatial analysis and modeling; and (3) Macro language programming and user interface design. Three lecture hours and a two-hour lab session each week. *(Spring)*

GEOG 4140. Geographic Information Techniques for Community Planning. (4) Prerequisite: GEOG 4120 Introduction to Geographic Information Systems, one community planning class and/or permission of the instructor. This class is focused on the connection between community planning and geographic information techniques under the general framework of planning support systems (PSS). It is designed to help students develop knowledge, skills, and experience in the following areas. (1) municipal geographic database handling; (2) land suitability and feasibility assessment; (3) landscape aesthetics assessment; (4) sketch planning; and (5) systematic approaches to planning. A real work project from the Charlotte region will be conducted. A two-hour lab is required.

GEOG 4155. Retail Location. (3) Spatial attributes of retailing and related activities. Location patterns, store location research, trade area delineation and consumer spatial behavior. (*Spring*)

GEOG 4160. The Geography of Transportation Systems. (3) Geographical and human factors that affect the movement of goods and people from place to place. Emphasis on transportation routes and networks, commodity flow patterns, and the locational implications of freight rates. (*Spring*)

GEOG 4209. Small Town Planning. (3) This course will explore small town population dynamics, rural-urban fringe land use dynamics, and changes in small towns' community identity and sense of place. Emphasis will be placed on the issues and techniques that typify small town planning environments. Students will investigate these issues via field work and data collection at municipal scales within the Charlotte region. *(Spring, alternate summers)*

GEOG 4210. Urban Planning Methods. (3) Prerequisite: GEOG 3205 or permission of instructor. Scope and methods of urban planning. Emphasis on analytical techniques, projections, and data sources used in developing comprehensive planning tasks and strategies. (*Fall*)

GEOG 4220. Housing Policy. (3) Prerequisites: GEOG 1105 and at least one of GEOG 2200, GEOG 2165,

GEOG 3100, GEOG 3205 or GEOG 3215, or permission of instructor. This course is designed to provide students a comprehensive overview of U.S. housing policy while honing their research and analytical skills. Topics covered will include the evolution of housing policy, how the provision of housing impacts urban spatial patterns, and the past and present role of housing on regional economic development, land use planning, environmental planning, transportation infrastructure, community revitalization, and social capital. *(Fall)*

GEOG 4240. Geography of Knowledge and Information. (3) Examination of the factors that influence the location of economic activities in the information age. Discussions and lectures explore the geographic aspects of the transition away from manufacturing to information processing as the primary mode of production. The transition is examined in terms of technology development, urban and regional development, information flows and the location of quaternary industry. *(Fall, On demand)*

GEOG 4255. Applied Population Analysis. (3) Population data sources; measuring population change; elementary projection and estimation techniques; spatial sampling; migration; survey design; applications in the public and private sectors. (*Fall*)

GEOG 4260. Transportation Policy Formulation. (3) Prerequisite: Permission of Department. Structure of transportation policy at federal, state, and local levels including policies concerning highway financing and investments, congestion, safety, and use and development, energy, transit, and the provision of inter-city services. *(Fall) (Alternate years)*

GEOG 4265. Transportation Analysis Methods. (3) Prerequisite: Permission of Department; statistics recommended. Procedures for analyzing the operation and performance of transportation systems; includes network planning models, minimum path algorithms and assignments; energy, air pollution, and activity analysis models; and research approaches, data sources, time and activity budgets, infrastructure condition and needs assessment. *(Spring) (Alternate years)*

GEOG 4270. Evaluation of Transportation Impacts. (3) Prerequisite: Permission of Department. Methods and case studies for evaluating impacts and benefits of transportation investments including site-level impact analysis; project, corridor, and area scales; multi-modal evaluation and examination of mutually exclusive alternatives. *(Fall) (Alternate years)*

GEOG 4310. Urban Social Geography. (3) Prerequisites: GEOG 1105 and at least one of GEOG 2200, GEOG 2165, GEOG 3100, or GEOG 3205, or permission of the instructor. Examines the reflexive relationship between society and urban space. Explores the intersection between urban geography and social theory, the evolution of city, community and personal spaces, and the relations and constructions of class, race, gender, and sexuality that shape and are shaped by the urban spaces in which we live and work. *(Spring)*

GEOG 4400. Internship in Geography. (3-6) Prerequisite: Permission of the department. Research and/or work experience designed to be a logical extension of a student's academic program. The student must apply to Department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The student can receive three to six hours credit depending on the nature and extent of the internship assignment. (*On demand*)

GEOG 4405. Urban Field Geography. (3) Prerequisite: six hours of urban-related undergraduate courses or permission of instructor. Intensive field studies of cities of the Carolinas, including one-day and overnight trips to cities of the mountains and coastal areas. Emphasis on day study trips within the Piedmont. Exercises include land-use mapping, trip journals, interviews and comparisons of the results of zoning and urban development practices within satellite cities of the Charlotte Metropolitan Statistical Area. *(Summer)*

GEOG 4800. Individual Study in Geography. (1-4) Permission of Department must be obtained and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit. (*On demand*)

GEOLOGY (GEOL)

GEOL 1200. Physical Geology. (3) A study of the basic geological principles and processes in the earth sciences; the earth as a planet; treatment of physical processes shaping the earth; earth materials and landforms. (*Fall, Spring, Summer)*

GEOL 1200L. Physical Geology Laboratory. (1) Prerequisite or corequisite: GEOL 1200. Experimental study and investigation of the basic geological principles and processes in earth science; minerals, rocks, earth materials, and landforms. One lab period of three hours per week. Off-campus field trip required. (*Fall, Spring, Summer) (Evenings*)

Note: Although the laboratory and lecture sections of GEOL 1200 are taught as separate courses it is recommended that students take GEOL 1200L concurrently with GEOL 1200. Students with scheduling problems or students not fulfilling the UNC Charlotte science and technology requirements may take the lecture without the laboratory. Students fulfilling the UNC Charlotte science and technology requirement must either: (a) take GEOL 1200 and GEOL 1200L concurrently or (b) take GEOL 1200L in a semester subsequent to taking GEOL 1200.

GEOL 1210. Earth History. (3) Prerequisites: GEOL 1200. The origin and evolution of the earth's major features: the beginnings and changes of the earth's continents, atmosphere, oceans, and life forms, set in the vast context of geologic time. Three hours of lecture. *(Fall, Spring*)

GEOL 1210L. Earth History Lab. (1) Prerequisites: GEOL 1200, 1200L. Additional prerequisite or corequisite: GEOL 1210. Learn the basic techniques used by geologists to interpret the history of life, changing surface environments and habitats, plate tectonic movement, mountain building events, and climate changes. Hands-on investigation of rocks, fossils, geologic maps, and more. One lab period of three hours per week. Off campus field trip required. *(Fall, Spring)*

GEOL 2000. Topics in Geology. (1-4) Treatment of major topical issues in Geology. May be repeated for credit as topics vary. *(On demand)*

GEOL 2100. The Violent Earth. (3) Volcanoes, earthquakes, hurricanes, tornadoes, floods and other catastrophic natural phenomena with emphasis on causes, effects and human adjustments. *(On demand)*

GEOL 3000. Selected Topics in Geology. (1-4) Prerequisite: GEOL 1200-1200L, or permission of the instructor. Treatment of specific topics selected from one of the fields of geology. May be repeated for credit as topics vary. *(On demand)*

GEOL 3110. Minerals and Rocks. (3) Prerequisites or corequisites: GEOL 1200 and 1200L. Formation processes, composition and identification of rocks and minerals in the earth's crust with important abundance or special use. *(On demand)*

GEOL 3115. Mineralogy. (4) Prerequisite: GEOL 1200-1200L. Prerequisite or corequisite: CHEM 1251-1251L or permission of the instructor. Identification, classification and description of minerals based on physical properties, crystallography, and chemical composition. Includes diagnostic techniques for identification of common ore and rock forming minerals. Three hours of lecture and one three-hour lab per week. *(Spring)*

GEOL 3120. Geochemistry. (3) Prerequisites: GEOL 1200-1200L and Chemistry 1251-1251L, or permission of instructor. Geochemical survey of origin, evolution and present composition of the earth. *(Alternate years)*

GEOL 3120L. Geochemistry Laboratory. (1) Prerequisite or corequisite: GEOL 3120 or permission of instructor. Analytical methods and sample preparation techniques used by geochemists. One three hour meeting per week. *(On demand)*

GEOL 3124. Sedimentology. (4) (W) Prerequisites: GEOL 1210-1210L, GEOL 3115 or permission of instructor. Examination of sedimentary rock features and compositions as related to origin, dispersion, deposition, diagenesis, classification and general distribution of sedimentary materials. Three hours of lecture and one three-hour lab per week. (*Fall*)

GEOL 3130. Structural Geology. (4) Prerequisite: GEOL 3115 or permission of the instructor. A systematic examination of the structures and processes of rock deformation. Three lecture hours, one three-hour lab per week. (*Fall*)

GEOL 3140. Paleontology. (3) Prerequisite: GEOL 1200, 1200L and GEOL 1210, 1210L or permission of the instructor. Nature of fossils, analysis of growth and variation in fossil assemblages, reconstruction of the modes of life of extinct organisms, paleobiogeography, biostratigraphy, and the fossil record of evolutionary pattern and processes. *(On demand)*

GEOL 3190. Environmental Geology. (3) Prerequisites: GEOL 1200, 1200L. Aspects of geology with direct or indirect impact on society. Topics include slope stability, earthquake hazards, solid waste disposal, flooding, ground water problems, soil loss, sediment pollution, watershed dynamics, water and soil pollution, and radioactive waste disposal. *(Spring)*

GEOL 3190L. Environmental Geology Laboratory. (1) Prerequisite or corequisite: GEOL 3190. Investigation of the causes, consequences, and mitigation of natural hazards and disasters. One three-hour lab per week. (*On demand*)

GEOL 4000. Selected Topics in Geology. (1-4) Prerequisites: ESCI 1101-1101L, GEOL 1200-1200L, or permission of the instructor. In-depth treatment of specific topics selected from one of the fields of geology. May be repeated for credit as topics vary. *(On demand)*

GEOL 4100. Igneous and Metamorphic Petrology. (4) Prerequisite: GEOL 3115. Classification, mineralogy and chemical properties of igneous and metamorphic rocks including the tectonic processes by which they formed. Lab emphasizes hand specimen and petrographic description and interpretation of rocks in thin sections. (*Alternate years*)

GEOL 4105. Geomorphology. (3) Prerequisites: ESCI 1101-1101L or GEOL 1200-1200L. Surficial processes and landform development as controlled by climate, tectonics, rock characteristics and time with emphasis on plate tectonic, weathering, erosion, mass wasting, surface water, groundwater, glacial, wind and coastal processes and climate change in landscape development. *(Fall)*

GEOL 4105L. Gemorphology Laboratory. (1) Prerequisite or corequisite: GEOL 4105. Analysis of landforms and the surficial processes responsible for landform development. One lab period of 3 hours per week. *(Fall)(On demand)*

GEOL 4110. Stratigraphy. (4) Prerequisites: GEOL 1210-1210L and GEOL3124, or permission of instructor. Vertical and horizontal relationships of layered earth materials as a key to understanding basin history, past depositional environments, and their transformation through time. Three lecture hours, three lab hours per week. (*Spring*)

GEOL 4115. Applied Geophysics. (4) Prerequisites: GEOL 3115, GEOL 3130, and introductory physics or

permission of instructor. Instrumental analysis of the earth's physical parameters. Study of human-induced seismic and electrical signals, and natural magnetic and gravitational fields for the purposes of locating faults, ore bodies, ground water, and other earth hazards or resources. Three hours of lecture and one three-hour lab per week. (*On demand*)

GEOL 4120. Geologic Mapping and Interpretation. (4) Prerequisites: GEOL 3130 and GEOL 4100 or permission of instructor. Field and lab oriented study using principles of mineralogy, petrology and structural geology. Involves collection and resolution of field data, techniques of presenting data, development of geologic maps, and critical reviews of existing literature. Two hours of lecture, four hours of lab/field work per week. (*Alternate years*)

GEOL 4125. Geologic Summer Field Camp. (6) Prerequisite: junior standing and permission of instructor. Concentrated field investigation of geologic features. Data collection in the field, geologic mapping, report and map preparation and time management. Location of field camp will be specified each time course is offered. (*Summer*)

GEOL 4130. Optical Mineralogy. (4) Prerequisite: GEOL 3115. Light optics theory, the behavior of plane polarized light in a solid medium. The laboratory emphasizes the use of petrographic microscope oil immersion techniques and identification of the common rock forming minerals. Three hours of lecture and one three-hour lab per week. *(On demand)*

GEOL 4135. Tectonics. (4) Prerequisite: GEOL 3130 or permission of the instructor. A systematic examination of the evolution and dynamics of the earth from the perspective of plate tectonics theory. Three lecture hours, and one three-hour lab per week. (*Alternate years*)

GEOL 4145. Fundamentals of Hydrogeology. (4) Prerequisites: GEOL 1200-1200L, MATH 1241, CHEM 1251-1251L, or permission of instructor. Fundamentals of groundwater hydrology. Principles of flow and transport in groundwater aquifers and the vadose zone. Topics include: storage compressibility, capillarity, Darcy's Law, aquifer parameters, steady and transient flow equations, well hydraulics, geological controls on groundwater flow, and transport of non-reactive chemical species by advection, diffusion and dispersion in porous media, together with applied problems. Three hours of lecture, and three hours of lab per week with occasional field trips. *(Fall)*

GEOL 4165. Aqueous Geochemistry. (4) Prerequisite: Prerequisites: CHEM 1251-1251L, CHEM 1252-1252L and GEOL 3115, or permission of instructor. Interaction of rocks, minerals, and gases with water under natural conditions, including an overview of the compositions of natural waters from a variety of environmental and geologic settings emphasizing a rigorous thermodynamic approach to understanding water-rock interactions. Three hours of lecture, and three hours of lab per week. *(On demand)*

GEOL 4185. Mineralogy, Economics, and the Environment. (3) Prerequisites: GEOL 3115 Mineralogy or permission of instructor. This course will focus on the origin, distribution, and consumption rate of the Earth's mineral resources. Lectures and assignments are intended to promote understanding of the geologic, engineering, and economic factors that govern mineral exploration and production. Environmental impacts of the mining industry are also discussed. *(On demand)*

GEOL 4400. Internship in Geology. (3-6) Prerequisite: Permission of the department. Research and/or work experience designed to be a logical extension of a student's academic program. The student must apply to the Department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The student can receive three to six hours credit depending on the nature and extent of the internship assignment. *(On demand)*

GEOL 4410. Applied Soil Science. (4) Prerequisites: GEOL 3115, GEOL 3124, ESCI 4210 or permission of the instructor. Students will read and discuss current literature pertaining to the application of soils to various fields of research such as surficial processes, active tectonics, ecology, stratigraphy, archeology, and environmental assessment. Topics covered will vary depending on the interests of the students. Students will create and execute a semester-long soils-based field or laboratory research project of their choosing. Three hours seminar, three hours field or lab each week. *(Spring)*

GEOL 4800. Individual Study in Geology. (1-4) Prerequisites: Permission of the Department and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit as topics vary. *(On demand)*

GERMAN (GERM)

GERM 1201. Elementary German I. (4) For students with limited or no previous experience in German. First course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in German. *(Fall, Spring, Summer) (Evenings)*

GERM 1202. Elementary German II. (4) Prerequisite: GERM 1201 or equivalent. Second course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in German. *(Fall, Spring, Summer)(Evenings)*

All 2000-level courses fulfill the language requirement of non-majors who are required to take one intermediate-level language class.

GERM 2201. Intermediate German I. (3) Prerequisite: GERM 1202 or equivalent. Review of grammar; reinforcement and expansion of competence in speaking, understanding, reading, and writing, in a cultural context. *(Fall, Spring)*

GERM 2202. Intermediate German II. (3) Prerequisite: GERM 2201 or permission of the Department. Review of grammar, composition, and conversation using film and/or readings on the culture and civilization of German-speaking countries. Students who wish to continue with advanced offerings in German are advised to complete GERM 2202. *(Fall, Spring)*

GERM 2210. German in the Workplace. (3) Prerequisite: GERM 2201 or permission of the Department. Introduction to spoken and written language of the German-speaking business world. Acquisition of and practice with general commercial terminology used in German for such functional business areas as economics, management, marketing, finance, and import-export. (Alternate for GERM 2202) *(Spring)*

GERM 3030. Studies in German Culture. (3) Conducted in English. No knowledge of German required. A study of the life and thought of German-speaking people both past and present. Course topic will concentrate on a geographical area, a particular cultural institution, or a particular period. May be repeated as topic changes. *(Alternate years)*

GERM 3050. Studies in German Literature. (3) Conducted in English. No knowledge of German required. May be repeated as topic changes. *(Yearly)*

GERM 3160. Survey of German Film. (3) (W) (O) Prerequisite: sophomore status and ENGL 1102. Introduction to major movements in German film history. Conducted in English. Lectures, group discussions, viewing of films (in whole and in part), and a variety of writing assignments. For students seeking to apply this course toward requirements for the German major or minor there is a prerequisite of four semesters of German or the equivalent and a corequisite of GERM 4050. *(On demand)*

GERM 3201. Advanced German Grammar, Composition and Conversation I. (3) (O) Prerequisite: GERM 2202 or GERM 2210 or permission of the Department. For prospective teachers of German and students who want intensive oral and written work in the language, as well as review of grammar. *(Yearly)*

GERM 3202. Advanced German Grammar, Composition and Conversation II. (3) Prerequisite: GERM 2202 or permission of the Department. Review of German grammar. Intensive oral and written work in the language. *(Yearly)*

GERM 3800. Directed Individual Study. (1-3) Prerequisite: permission of the Department; normally open only to German majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (*On demand*)

GERM 4010. Periods in the History of German Literature. (3) (a) Medieval literature, (b) Classicism, (c) Romanticism, (d) Nineteenth Century, (e) Contemporary literature. Prerequisites: two 3000-level courses or permission of the Department. Study of the major writers and works in a given period. Readings, lectures, and reports. May be repeated for major credit with change of topic. (*Alternate years*)

GERM 4020. The Chief Genres in German Literature. (3) (a) Novel, (b) Theater, (c) Lyric poetry, (d) short prose fiction. Prerequisites: two 3000-level courses or permission of the Department. An analysis of a major genre and its development within German literary history. Readings, lectures and reports. May be repeated for major credit with change of topic. (*Alternate years*)

GERM 4050. Special Topics in German. (1-3) Prerequisite: one 3000-level course or permission of the instructor. Treatment of a special group or figure in German literature, specialized topic in German culture or language, or special problems in German conversation. May be repeated for credit with change of topic. (*Fall, Spring, Summer*)

GERM 4120. Advanced Business German I. (3) Prerequisites: GERM 2210, 3201 and an additional 3000- or 4000-level course (3202 recommended), or permission of the Department. Advanced studies in Business German, intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as economics, management, and marketing. *(Fall)*

GERM 4121. Advanced Business German II. (3) Prerequisites: GERM 2210, 3201, and an additional 3000- or 4000- level course (3202 recommended), or permission of the Department. Advanced studies in Business German, intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as marketing, finance, and import-export. *(Spring)*

GERM 4203. Survey of German Literature I. (3) Prerequisites: two 3000-level courses or permission of the Department. General introduction to German literature from the Middle Ages to the Classical Period. Book reports and class discussion on collateral readings. (*On demand*)

GERM 4204. Survey of German Literature II. (3) Prerequisites: two 3000-level courses or permission of the Department. German literature since Classicism. Book reports and discussions on collateral readings. (*On demand*)

GERM 4410. Professional Internship in German. (1-6) Prerequisites: GERM 3201 and 3202, or equivalent and permission of the department. Faculty-supervised field and/or research experience in a cooperating professional (e.g., business) or community organization. Contents of

internship based upon a contractual agreement among the student, department, and business or community organization. *(Fall, Spring, Summer)*

GERM 4800. Directed Individual Study. (1-3) Prerequisite: permission of the Department; normally open only to German majors and minors. Individual work on a selected area study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (*On demand*)

GREEK (GREK)

GREK 1201. Elementary Ancient Greek I. (4) Beginning survey of elementary Ancient Greek grammar through selected readings. *(Alternate years)*

GREK 1202. Elementary Ancient Greek II. (4) Prerequisites: GREK 1201 or equivalent. Completion of the survey of elementary Ancient Greek grammar; connected readings in elementary to intermediate Biblical and Attic prose. *(Alternate years)*

GREK 3800. Directed Individual Reading. (1-3) Prerequisite: permission of instructor. Individual work on an author or genre to be arranged with the instructor. *(On demand)*

GERONTOLOGY (GRNT)

GRNT 2100. Aging and the Lifecourse. (3) Crosslisted as SOCY 2100. An interdisciplinary course that examines the phenomenon of aging and its consequences for society from a variety of perspectives. Students participate in lectures, discussions and service learning projects designed to give them a broad overview of the field of gerontology. Emphasis on the wide variation in the aging process and approaches to meeting the needs of the aging population. *(Annually)*

GRNT 2124. Psychology of Adult Development and Aging. (3) Crosslisted as PSYC 2124. Psychological development through adulthood and old age. Emphasis on processes underlying continuity and change in adulthood, including personality and socialization, cognitive development and the psychophysiology of aging. *(Spring)*

GRNT 3115. Health and the Aging Process. (3) Crosslisted as HLTH 3115 and NURS 3115. Examination of the physiologic processes of aging as a normal life experience. Study of psychological, nutritional and general health issues designed to facilitate high-level wellness. *(Fall)*

GRNT 3132. Aging and Culture. (3) (W) Crosslisted as ANTH 3132. Examination of the processes of aging in various cultural contexts, with emphasis on the implications for understanding aging within American society. Application of anthropological theories and methods to the study of aging. *(On demand)*

GRNT 3267. Sociology of Dying, Death and Bereavement. (3) Crosslisted as SOCY 3267. Social definitions of death, process of dying, facing death across the lifecourse, grief, bereavement, bioethical issues, impacting individuals and society. *(Yearly)*

GRNT 3600. Senior Seminar and Field Experience in Aging. (3) (W) Prerequisites: completion of at least 9 hours in gerontology curriculum including GRNT 2100, and two primary electives (selected from GRNT 3115, 2124, 4110, and 4250). Capstone course for the minor in Gerontology designed to help students apply theories, research methods, and specific intervention strategies to substantive issues, and critically examine the organizational structure of aging programs and policies. Two seminar hours and six field placement hours per week. *(Spring)*

GRNT 3800. Independent Study in Gerontology. (1-8) Prerequisite: Permission of the instructor and the gerontology undergraduate coordinator. Supervised individual study and/or field-based experience in a topic or area of Gerontology of particular interest to the student. May be repeated for credit but only a total of 3 credits can be counted toward a Gerontology minor. *(On demand)*

GRNT 4050. Topics in Gerontology. (1-4) Investigation of specific issues in Gerontology, either from the perspective of a single discipline or from a multidisciplinary perspective. May be repeated for credit as topics vary. A total of 3 credits can be counted toward minor. *(On demand)*

GRNT 4110. Sociology of Aging. (3) Crosslisted as SOCY 4110. Prerequisite: SOCY 1101 or permission of the instructor. Changing characteristics, aspirations and needs of older adults and their impact upon such institutions as the family, work, the economy, politics, education and health care; emphasis on sociological theories of aging, contemporary research, and the analysis of specific aging policies and programs. *(Annually)*

GRNT 4134. Families and Aging. (3) Crosslisted as SOCY 4134. Prerequisite: SOCY 1101 or permission of instructor. Theories explaining the formation and functioning of American families with emphasis on the impact of the aging of society. Examination of the current demographic trends and expectations of multigenerational families, as well as the future demands and modifications. *(On demand)*

GRNT 4150. Older Individual and Society. (3) Crosslisted as SOCY 4150. Study of the social and cultural context on the lives of aging individuals in American society. Will include a focus on expectations, social interactions, and psychological well-being in the context of retirement, caregiving, and health. *(Yearly)*

GRNT 4250. Aging Programs and Services. (3) Examination of federal, state and local framework of services and programs for the aging. *(On demand)*

GRNT 4260. Women: Middle Age and Beyond. (3) Crosslisted as HLTH 4260 and WMST 4260. Position of older women in society and the particular problems of and issues for women as they age. *(On demand)*

GRNT 4270. Intergenerational Relationships & Programs. (3) Exploration of the importance and consequences of intergenerational relationships and the range of programming currently available to encourage interaction between people of different ages. *(On demand)*

HISTORY (HIST)

HIST 1000. Topics in History. (3) Treatment of a historical topic at an introductory level. May be repeated for credit as topics vary. *(On demand)*

HIST 1120. European History to 1660. (3) Political and cultural developments of Western Europe from the fourth century A.D. to the Age of Absolutism. (*Fall, Spring, Summer)*

HIST 1121. European History Since 1660. (3) European history from the Age of Absolutism to the present. (*Fall, Spring, Summer) (Evenings)*

HIST 1160. U.S. History I. (3) American history from the earliest times to 1865. (*Fall, Spring, Summer)(Evenings)*

HIST 1161. U.S. History II. (3) American history from 1865 to the present. *(Fall, Spring, Summer) (Evenings)*

HIST 2000. Topics in U.S. History. (3) Treatment of a topic in U.S. History. May be repeated for credit as topics vary. *(Yearly)*

HIST 2001. Topics in European History. (3) Treatment of a topic in European History. May be repeated for credit as topics vary. *(Yearly)*

HIST 2002. Topics in Non-Western History. (3) Treatment of a topic in non-Western History. May be repeated for credit as topics vary. Meets non-Western requirement. *(Yearly)*

HIST 2003. Topics in Comparative or Applied History. (3) Treatment of a topic in comparative or applied history. May be repeated for credit as topics vary. *(Yearly)*

HIST 2100. Introduction to Historical Methods. (3) (W) (O) An introduction to the skills needed for historical research and communication. Includes experience with primary and secondary sources, library research, historical evidence, and citation. Special emphasis is placed on the delivery of a coherent, analytical argument in both written and oral formats. Majors only. *(Fall, Spring, Summer) (Evenings)*

HIST 2101. American Business History. (3) A survey of the origins, methods, and goals of modern business enterprise. Lectures emphasize the social history of the American business community and the relation between public policy and economic growth. Discussion emphasizes current economic problems and policies. (*On demand)*

HIST 2105. American Slavery and Emancipation. (3) This course surveys the transformation of life and labor for African Americans from the era of North American colonization through the Civil War and Reconstruction. The class will emphasize slavery as a complex system of labor exploitation and racial control, the dynamics of slave communities, slave resistance, emancipation as process, blacks as agents of their own social and economic change, and the broad meanings of slavery and freedom in American life and in world history. Coursework includes reading of primary and secondary texts. *(Alternate years)*

HIST 2110. Technology and Science in Society I: Before the Industrial Revolution. (3) The worldwide history of science and technology from the Stone Age to the steam engine, with particular emphasis on the Scientific Revolution of the 16th and 17th centuries. Examines the impact of scientific and technological change on society and the ways in which society shaped the development of science and technology. Scientific and technical background is not a prerequisite. (*Alternate years*)

HIST 2111. Technology and Science in Society II: Since the Industrial Revolution. (3) The history of science and technology in society from the 18th century to the present. Examines the inter-connections of science and technology with society, with particular attention to the U.S. Designed for all students, regardless of scientific and technical background. (*Alternate years*)

HIST 2120. American Military History. (3) A survey of the development and organization of military practice from the colonial period to the present. (*Spring*)

HIST 2125. Democracy in America: A Historical Perspective. (3) This course considers the history of politics and government in the United States by examining the history of American democracy in theory and practice. To what extent have American politics and government been democratic? What does the history of democracy in America suggest about the future of politics and society in the United States and the world? This course will examine the rise of parties and mass politics, machine politics and reform movements, the history of citizenship and suffrage as relates to race, ethnicity, and gender, the relationship between war and democracy, and the problem of reconciling democratic ideals with existing social and economic hierarchies. *(Alternate years)*

HIST 2130. Introduction to Historic Preservation. (3) Techniques available in the United States to identify and preserve historically significant structures, buildings, sites, areas and objects. (*Alternate years*)

HIST 2135. Introduction to Museums & Historic Sites. (3) This course introduces students to the history and

functions of museums and historic sites. Through lecture, discussion, and field trips, students will learn about the role of museums and historic sites in American society. *(Alternate years)*

HIST 2140. Disease and Medicine in History. (3) Development of medical knowledge, trends in the techniques and availability of medical and psychiatric care, impact of disease and medicine, on selected problems in world history. *(On demand)*

HIST 2150. U. S. Women's History to 1877. (3) Crosslisted as WMST 2150. A survey of women's experience in the U. S. from colonization through the civil war and reconstruction. Special emphasis on the evolution of women's public roles and the impact of class, race, and region in shaping women's lives. *(Alternate years)*

HIST 2151. U.S. Women's History since 1877. (3) Crosslisted as WMST 2251. A survey of women's experience in the U.S. from reconstruction to the present. Special emphasis on work, family, and feminism, and the impact of class, race, and region in shaping women's lives. *(Alternate years)*

HIST 2152. European Women's/Gender History. (3) Crosslisted as WMST 2252. An exploration of women's changing roles in European Society and politics, covering topics of religion, work, family, and activism. *(Alternate years)*

HIST 2155. Southern Women's History. (3) This course surveys the history of women's experiences in the American South. Through readings, lectures, and discussion students will learn about the importance of race, class, and gender in shaping southern women's lives. *(Alternate years)*

HIST 2160. African-American History, 1400-1860. (3) Crosslisted as AFRS 1111. The course explores the events and circumstances that brought Africans to the Americas and the experience of these peoples during the time that slavery persisted in the South. Emphasis will be upon the economic and cultural systems that created and maintained slavery in the South and constrained freedom in the North and on the responses and struggles of Africans to these systems. *(Fall)*

HIST 2161. African-American History Since 1860. (3) Crosslisted as AFRS 1112. This course explores the African-American experience from the Civil War to the present. It follows the struggle of freed slaves and free people of color to take advantage of the promise of emancipation and the changing place of African-Americans in their society. *(Spring)*

HIST 2200. Asian Civilization. (3) An investigation of the philosophical, religious, social, political and economic foundations of the great Asian civilizations. Emphasis will be placed on understanding those traditions that influence Asian societies today and a comparison of those traditions to Western traditions. Meets non-Western requirement. (*Fall*)

HIST 2201. History of Modern Asia. (3) Crosslisted as INTL 2201. Focus on the rise of modern Asia from the period just prior to the armed intervention of Western European nations. Emphasis will be placed on the impact of imperialism, colonialism, and the rise of Asian nationalism on Asian societies. Meets non-Western requirement. (*Spring*)

HIST 2206. Colonial Latin America. (3) A survey of major political, economic, and cultural developments from earliest times to 1826. Meets non-Western requirement. *(Yearly)*

HIST 2207. Modern Latin America. (3) Crosslisted as INTL 2401. A survey of Latin American history from 1826 to the present with emphasis on the economy and society. Special attention to twentieth-century revolutions and the role of the United States in Latin America. Meets non-Western requirement. (*Fall*)

HIST 2210. Pre-Colonial Africa. (3) A survey of major political, economic and religious developments in Sub-Saharan Africa from earliest times to the early 19th century. Meets non-Western requirement. (*Fall*)

HIST 2211. Modern Africa. (3) Crosslisted as INTL 2101. A survey of major developments in 19th and 20th century Sub-Saharan Africa, with emphasis on the European conquest, the colonial period, and the triumph of modern African nationalism. Meets non-Western requirement. (*Spring*)

HIST 2215. A History of Muslim Societies. (3) This course covers the history of Muslim societies from the 6th century until the present times. It focuses on the following issues: Birth and expansion of Islamic faith; political, cultural, artistic, intellectual and social history of Muslim societies; relationship between the Islamic World and the Christian Europe; impact of imperialism, nationalism and modernization of Muslim societies; and the efforts to reassert Islamic identity in an era of tightening globalization. Meets non-western requirement. *(Alternate years)*

HIST 2216. The Modern Middle East. (3) Crosslisted as RELS 2216. An introduction to the history of this important and dynamic region. The course focuses on the issues that have defined the Middle East in the recent past and provides students with the historical context needed to understand the region, its peoples, and its conflicts in greater depth. Meets non-Western requirement. *(Fall)*

HIST 2250. Russian History from Earliest Times to 1801. (3) Development of the Russian people, focusing upon the rise and fall of the Kievan state, the impact of the period of Tartar domination, the rise of Moscovy, and the growth of the Tsarist autocracy before the reign of Alexander I. (*Alternate years*)

HIST 2251. Russian History from 1801 to 1917. (3) Decline and fall of the Tsarist empire, focusing upon the efforts of the last four rulers to perpetuate the monarchy and upon the factors working against the effort. (*Alternate years*)

HIST 2252. Russian History from 1917 to the Present. (3) Development of Soviet Russia, focusing upon the October 1917 Revolution, Lenin's years of rule, Stalin's rise to power, the Five Year Plan and the years since World War II. (*Alternate years*)

HIST 2260. Britain to 1688. (3) British history with emphasis on institutional, cultural, and economic developments. (*Alternate years*)

HIST 2261. Britain since 1688. (3) Continuation of HIST 2260 with some treatment of the British Empire. (*Alternate years*)

HIST 2271. Modern France (1750 to the Present). (3) A study of France, from the Enlightenment and the Revolution of 1789, across the revolutions and wars of the 19th and 20th centuries, to the present. *(Alternate years*)

HIST 2281. Modern Germany. (3) A survey of German history in the 19th and 20th Centuries covering the emergence of a unified Germany, the Wilhelmine Empire, the Weimar Republic, the Third Reich, the two Germanys and reunification. *(Alternate years)*

HIST 2284. World War II: The European Theater. (3) Major campaigns of World War II with emphasis upon the European theater of operations. (*Alternate years)*

HIST 2285. World War II: The Pacific Theater. (3) A description and analytical survey of the military campaigns in the Pacific theater of operations. (*Alternate years)*

HIST 2297. History of North Carolina, 1500 to the Present. (3) An overview of North Carolina's historical development focusing on the social, economic, and political events that have shaped the state (*Fall, Spring*)

HIST 2400. History Internship. (1-3) Applied historical techniques utilizing modern methodology and experiences in off-campus institutions or on historical sites. (Pass/No Credit) (*On demand*)

HIST 3000. Topics in U.S. History. (3) Treatment of a topic in U.S. History. May be repeated for credit as topics vary. *(Yearly)*

HIST 3001. Topics in European History. (3) Treatment of a topic in European History. May be repeated for credit as topics vary. *(Yearly)*

HIST 3002. Topics in Non-Western History. (3) Treatment of a topic in non-Western History. May be repeated for credit as topics vary. Meets non-Western requirement. *(Yearly)*

HIST 3003. Topics in Comparative or Applied History. (3) Treatment of a topic in comparative or applied history. May be repeated for credit as topics vary. *(Yearly)*

HIST 3010. History and Culture through Film, Non-Western. (3) An examination of twentieth-century historical themes in cultural context through films and scholarly monographs. May be repeated as topics vary. Meets non-Western requirement. *(On demand)*

HIST 3011. History and Culture through Film. (3) An examination of twentieth-century historical themes in cultural context through films and scholarly monographs. May be repeated as topics vary. *(On demand)*

HIST 3101. History of Greece. (3) From the beginning of civilization in Greece to the 1st Century B.C. (*Alternate years*)

HIST 3102. History of Rome. (3) From the beginning of civilization in Italy to the 5th Century A.D. (*Alternate years*)

HIST 3106. Medieval Europe. (3) Europe from the decline of the Roman Empire (ca. 300 A.D.) to 1450. Major topics include: the spread of Christianity, the Frankish Monarchy, the Crusades, the revival of towns, the growth of centralized monarchies, and the Black Death and its consequences. *(Alternate years)*

HIST 3109. Renaissance and Reformation Europe. (3) European history in the era of Renaissance and Reformation, 1400 to 1650, with special attention to art and comparative analysis. *(Alternate years)*

HIST 3110. The Age of Revolutions in Europe (1789 to 1871). (3) A study of the role of the major revolutions of the nineteenth century in the making of modern politics. *(Alternate years*)

HIST 3115. Nineteenth Century Europe, 1814-1914. (3) Political developments in European history from the Congress of Vienna: liberalism, socialism, nationalism, imperialism and the diplomacy leading to World War I. (*Alternate years*)

HIST 3116. Twentieth Century Europe, 1914 to the Present. (3) Crosslisted as INTL 2301. Causes and results of World War I, rise of new governments, collapse of collective security, World War II and the postwar period. *(Fall)*

HIST 3118. Eastern Europe After 1945. (3) The first half of this course examines the impact of Communism on Eastern Europe, including its effects on daily life, the economy and politics. The second half covers Eastern Europe's troubled transition after 1989, looking at the difficulties this region has faced while trying to create democratic governments and market economics. *(Alternate years)*

HIST 3131. History of Sexuality. (3) Crosslisted as WMST 3131. An exploration of the roots of our modern attitudes toward sexuality beginning with ancient Greece and Rome, Judaism, and Christianity. Examination of changing attitudes and practices from the Enlightenment to the Victorians. Discussion of marriage, fertility control, abortion, prostitution, and homosexuality. *(Alternate years)*

HIST 3140. Irish History. (3) History of Ireland from prehistory to the present. Course examines the roots of Ireland's present conflicts in the long history of the English-Irish interaction. *(Alternate years)*

HIST 3141. World War I. (3) World War I from the outbreak of hostilities to the peace settlement. Impact on the combatant nations and subsequent development of the World. (*Yearly*)

HIST 3147. The Third Reich. (3) The origins of Nazism, the seizure of power, Hitler's domestic and foreign policy, and the collapse in World War II. (*Alternate years)*

HIST 3148. The Holocaust. (3) Study of the roots, conception, evolution and execution of the Holocaust, and its impact on culture and society. This course uses primary sources and eyewitness accounts to examine the Shoah from the perspectives of the perpetrator, rescuer, and bystander. *(Yearly)*

HIST 3150. Shakespeare's England. (3) England during the century surrounding the life of William Shakespeare using literature from the period as a window through which to explore issues of political, religious, economic, and social change. *(Alternate years)*

HIST 3155. Health and Healing in Africa. (3) This course provides an historical context for some of the major healthcare challenges facing Africa today from malaria and river blindness to Ebola and AIDS. Rather than uncritically accepting the impression of Africa as a 'land of disease' the course will trace the history, health and healing from the pre-colonial era through the period of colonial domination, and since political independence. Meets non-Western requirement. *(Alternate years)*

HIST 3160. History of Modern China. (3) China from 1600 to the present covering the founding of the last imperial dynasty, the arrival of the West, and China's struggle for unity in the twentieth century. Meets non-Western requirement. (*Alternate years*)

HIST 3162. Revolutionary Movements in Modern China. (3) Examination of popular uprisings in nineteenth-century China and their relationship to China's twentieth-century revolutionary experience. Meets non-Western requirement. (*Alternate years*)

HIST 3165. History of Modern Japan. (3) Japan from about 1600 to the present covering Japan's intellectual, social and economic transformation from an agricultural society to an industrial power. Meets non-Western requirement. (*Alternate years*)

HIST 3169. Central Asia from 1800 to the Present. (3) This course surveys the history of Central Asia from the Russian conquest up through the collapse of the Soviet Union and the era of independence. Specific consideration will be given to the former-Soviet Republics of Kazakstan, Uzbekistan, Tajikistan, Kirgizstan, and Turkmenistan, as well as Afghanistan, Mongolia, and Xinjiang in China. Particular themes and topics to be addressed in this course include colonization, revolution, reform, nationalism, Islam, and international relations. Meets non-Western requirement. *(Alternate years)*

HIST 3174. Resistance and Adaptation: Indian Peoples Under Spanish Rule. (3) A historical survey of the interactions of indigenous peoples of the western hemisphere with Spanish colonial authorities from the conquest era to 1825. The course focuses on the indigenous peoples of Mexico, Peru, Chile, and Argentina. Meets non-Western requirement. *(Alternate years)*

HIST 3175. Reform, Riots, and Rebellions in Colonial Spanish America, 1692-1825. (3) This course examines the economic, political, and cultural origins of violent conflict in colonial Latin America, culminating with an analysis of the revolutions for independence. Meets non-Western requirement. *(Alternate years)*

HIST 3176. History of Mexico. (3) A survey of Mexican history from pre-Columbian times to the present. Special emphasis will be given to the Spanish conquest, the colonial economy, the independence period, the revolution, and relations with the United States. Meets non-Western requirement. (*Alternate years*)

HIST 3177. The Cuban Revolution. (3) An examination of the economic and political forces that led to the Cuban revolution. Significant background material from the 19th and early 20th centuries will be presented in addition to an analysis of the revolution and post-revolutionary events. Meets non-Western requirement. (*Alternate years*)

HIST 3178. History of Brazil. (3) Crosslisted as AFRS 3278 and LTAM 3278. A study of Brazilian history since 1500, with an emphasis on social and economic history. The course emphasizes slavery and race relations, the emergence of export economics, rural protest movements, the effects of urbanization and industrialization, and the rise and fall of the military dictatorship. Meets non-Western requirement. *(On demand).*

HIST 3179. Authoritarianism in Latin America. (3) Crosslisted as LTAM 3279. A study of authoritarian rule and popular resistance to authoritarianism in one or more selected Latin American countries, including, but not limited to, Argentina, Brazil, and Chile. May be repeated for credit as topics vary. Meets non-Western requirement. *(Alternate years)*

HIST 3180. Caribbean History. (3) Crosslisted as AFRS 3220 and LTAM 3220. Covering the sweep of history from European/indigenous contact, through the construction of a plantation regime based on African slave labor, and up to the present day, this class explores the spread of colonialism, the dynamics of slavery, and the tumult of abolition and national independence movements. The Caribbean Sea will be examined as a region, emphasizing the ties uniting the

islands and the circum-Caribbean coasts. The region's past – including empire and imperial conflict, racial oppression and interaction, and international contact – and its legacies will be discussed in relation to political economics, race, and contemporary culture. Meets non-Western requirement. *(On demand)*

HIST 3181. Afro-Latin American History. (3) Crosslisted as AFRS 3270 and LTAM 3270. This course explores the African Diaspora in Latin America ranging from the Caribbean Sea to the Rio de la Plata. From slavery, to fighting for freedom in the Spanish-American Wars of Independence, to forging new notions of citizenship in twentieth century Brazil, African-descended peoples have an important place in Latin America's historical past. According special attention to regions with concentrated populations of African-descended peoples, this course reveals the vibrant history of Afro-Latin America. Meets non-Western requirement. *(On demand).*

HIST 3190. Slavery, Racism and Colonialism in the African Diaspora. (3) Crosslisted as AFRS 3260 and LTAM 3260. This course is designed to explore how race and racism, slavery, and colonialism served as principal institutions and constructs shaping the experience between Africa and the emerging African Diaspora in the New World. Students will consider how the maintenance of Western social, economic, and political superiority materialized as functions of these three important historical developments. Meets non-Western requirement. *(On demand).*

HIST 3201. Colonial America. (3) This course examines the diverse and dynamic societies of colonial North America, with particular emphasis on Britain's thirteen mainland colonies. The course begins with Europe's age of discovery and exploration and ends on the eve of the imperial crisis that led to American independence. Major themes and topics include religious and political ideals of the colonists, labor systems, economic development, and the cultural exchanges between Europeans, Africans, and native Americans. *(Fall)*

HIST 3202. American Revolution, 1750-1815. (3) The American Revolution was both a military conflict fought over the issue of colonial independence and a catalyst for sweeping political and social change. This course examines the Revolution as a political, social, and military phenomenon, focusing on the transformation of political culture and the experiences of ordinary Americans. (*Spring*)

HIST 3203. The Antebellum U.S., 1800-1860. (3) Political and social changes accompanying rapid economic transformation between 1800 and 1860. Emphasis on the sectional tensions between North and South. *(Alternate years)*

HIST 3211. Civil War and Reconstruction, 1860-1877. (3) The American people in war and the postwar adjustment. Emphasis on the political, social and economic conditions of the North and South during the Civil War and Reconstruction period. (*Alternate years*)

HIST 3212. History of the South to 1865. (3) The South from colonial origins through the Civil War. Emphasis on the political and cultural developments which ultimately led the South to secession and the creation of a distinct Southern nation in the Confederacy. (*Yearly*)

HIST 3213. History of the South since 1865. (3) Southern history from Reconstruction to the present. Emphasis on race and class relations as the South copes with change. Special attention to the Civil Rights Movement, industrialization and urbanization. (*Yearly*)

HIST 3215. Southerners. (3) (W) Prerequisites: ENGL 1101 and 1102. A writing-intensive course that explores the distinctive characteristics of Southerners through study of biographies and autobiographies. The varied backgrounds of Southerners and selected Americans from other regions will be studied. (*Alternate years*)

HIST 3218. Racial Violence, Colonial Times to Present. (3). Crosslisted as AFRS 3218. This course examines the ways in which African-Americans and Whites used violence both as part of struggles for liberation and freedom as well as repression from the colonial period to the present in the United States. The focus will be on broader processes of social, political, and cultural change and at efforts to build cooperation. *(On demand)*

HIST 3240. African-Americans and the Legal Process. (3) Crosslisted as AFRS 3240. This course explores the unique role law has played in the African American experience, establishing the status of persons of African descent in America. Students will investigate how the legal history of African Americans has shaped American race relations over the past 400 years by tracing the evolution of race, racism, and racial formations as a function of America's legal system. *(On demand).*

HIST 3241. United States Social History to 1860. (3) (W) Ideas, groups and institutions that shaped early America, with emphasis upon the changes in family, religion, community, and class. (*Alternate years*)

HIST 3242. United States Social History since 1860. (3) (W) Ideas, groups and institutions that evolved from the Civil War to the present, with emphasis upon the formation of modern-day American society. (*Alternate years*)

HIST 3252. United States in the 20th Century, 1932-Present. (3) Political, economic, social and intellectual aspects of American democracy from the New Deal to the Great Society. Special emphasis on the New Deal and post-New Deal reform as well as America's role in world affairs. (*Spring*)

HIST 3256. United States Foreign Relations, 1901 to the Present. (3) American diplomatic history from the administration of Theodore Roosevelt to the present. Special emphasis on the interaction between domestic, economic, political and social changes, and the formulation of American foreign policy. (*Alternate years*)

HIST 3260. The United States and Latin America. (3) An examination of the complex relationship between the United States and Latin America in the nineteenth and twentieth centuries. Topics include U.S. territorial and economic expansion, cultural imperialism, and Latin American efforts to safeguard national sovereignty and to achieve economic development. *(Alternate years)*

HIST 3280. Blacks in Urban America. (3). Crosslisted as AFRS 3280. African-Americans have been part of the urban scene since the colonizing of the Americas. The course will examine the ways in which their presence in cities has both exemplified and contradicted the understanding of both urban development and race relations in America from colonial times to the present. *(On demand)*

HIST 3281. American Cities. (3) U.S. urban history. The city as a physical place, as a socio-political environment and as a cultural center. Emphasis on the social developments caused by urbanization. (*Alternate years*)

HIST 3288. History of the American West. (3) Influence of the frontier on the historical development of the U.S. Emphasis on the trans-Mississippi Western United States. (*Alternate years*)

HIST 3300. World History for Teachers. (3) This seminar style course enables aspiring history teachers to acquire an advanced command of World History and the ability to teach this subject using a variety of innovative teaching techniques. Students will conduct in-depth topics studies, develop concrete implementation models, and assessment methods for middle and high school classroom use. *(Fall)*

HIST 3310. Teaching History. (3) This interdisciplinary hands-on seminar prepares students for a career in history education. Using historical developments of the 20th Century as a starting point, students acquire practical, discipline-specific didactical skills native to the history profession and develop materials on NCSCS themes at the grade level they anticipate teaching. This seminar is geared toward advanced education students and history students seeking teaching licensure. *(Yearly)*

HIST 3795. Honors Seminar. (3) (W) (O) Prerequisite: Permission of instructor. Honors level examination of a particular topic. The second course in a required three-course sequence for Honors in History. May be repeated for credit as topics vary. Required of Davenport Scholars. Completion of this course with a grade of *C* or better meets the requirement for a 2100 course in the major. *(Fall)*

HIST 3797. Honors Methods and Practice. (3) Prerequisite: Permission of instructor. Prepares students for the research and writing of an honors thesis. Includes meetings with a range of faculty in the department, preparation of an honors thesis prospectus, and training in research methods and practices. The first course in a required three-course sequence for Honors in History. *(Spring)*

HIST 3799. Honors Thesis. (3) (W) Prerequisites: HIST 3797, and permission of instructor. The preparation and presentation of an acceptable Honors thesis or its equivalent. The final course in a required three-course sequence for Honors in History. Completion of a thesis earning a grade *C* or better meets the requirement for a 4000 level course in the major; a grade of "A" is required to earn honors. *(On demand)*

HIST 3800. Independent Projects in History. (3) Prerequisite: Permission of instructor. Individual research or readings on an historical topic. May be repeated for credit with permission of the coordinator or instructor. *(On demand)*

HIST 4000. Problems in American History. (3) (W) Prerequisite: HIST 2100 and major in History. A colloquium designed around a problem in American history, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. (*Fall, Spring) (Evenings*)

HIST 4001. Problems in European History. (3) (W) Prerequisites: HIST 2100 and major in History. A colloquium designed around a problem in European history, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. (*Yearly, Summer) (Evenings)*

HIST 4002. Problems in Non-Western History. (3) (W) Prerequisite: HIST 2100 and major in History. A colloquium designed around a problem in non-Western history, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. (*Yearly)*

HIST 4300. Introduction to Public History. (3) (W) Prerequisite: major in History. This course will provide an overview of the main subfields in the field of Public History. Students will learn the fundamentals of Museum Studies, Historic Preservation, and other fields at the discretion of the instructor. *(Yearly)*

PUBLIC HEALTH SCIENCES (HLTH)

HLTH 2101. Healthy Lifestyles. (3) Overview of issues related to personal health, including healthy behaviors, lifestyles, and outcomes. *(Fall, Spring, Summer)*

HLTH 3000. Topics in Public Health. (1-3). Prerequisite: permission of the instructor. Additional prerequisites and credit hours vary with topics. Special topics for intermediate level undergraduates. May be repeated for credit as topics vary. *(On demand)*

HLTH 3101. Foundations of Public Health. (3) Introduction to the field of public health, including its history, content areas, scope, and paradigms of professional practice. (*Fall, Spring*)

HLTH 3102. Comparative Healthcare Systems. (3) Prerequisite: majors only. Examination of organizations, structures, and relationships in national and

international healthcare systems and the associated financial, legal, and policy issues. (*Fall*)

HLTH 3103. Behavior Change Theories and Practice. (3) Overview of theoretical approaches to health behavior adherence and compliance, including increasing health enhancing behaviors and sustaining healthy behaviors over time. *(Fall, Spring)*

HLTH 3104. Research and Statistics in Health. (3) Prerequisite: majors only. Corequisite: HLTH 3104L. Examination of the use of research methods and statistics in public health, including issues related to research design, measurement, sampling, and the application and interpretation of statistical methods. (*Spring*)

HLTH 3104L. Research and Statistics in Health LAB. (1). Prerequisite: majors only. Corequisite: HLTH 3104. Activities designed to complement HLTH 3104. Meets once a week for 1.5 hours. (*Spring*)

HLTH 3105. Public Health Education and Promotion. (3) Prerequisite: majors only. Overview of principles and strategies for health education in public health practice settings. (*Spring*)

HLTH 3115. Health and the Aging Process. (3) Crosslisted as GRNT 3115 and NURS 3115. Examination of the physiologic processes of aging as a normal life experience. Study of psychological, nutritional and general health issues designed to facilitate high-level awareness. *(Fall)*

HLTH 4000. Special Topics in Public Health. (1-3). Prerequisite: permission of the instructor. Additional prerequisites and credit hours vary with topics. Special topics for advanced undergraduates. May be repeated for credit as topics vary. *(On demand)*

HLTH 4102. Healthcare Administration. (3) Prerequisite: HLTH 3102 and majors only. Overview of basic concepts and issues within the administration, financing, and policy of healthcare systems. (*Fall*)

HLTH 4103. Environmental Health: A Global Perspective. (3) Introduction to environmental and occupational health issues and their implications for individual and population health.(*Fall*)

HLTH 4104. Epidemiology. (3) Introduction to basic principles and methods used in epidemiology to detect and control disease in populations. *(Fall, Spring)*

HLTH 4105. Program Planning and Evaluation. (3) Prerequisite: HLTH 3105. Corequisite: HLTH 4105L. Use of program planning and behavior change models to design and evaluate theory-based public health promotion and education initiatives. (*Spring*)

HLTH 4105L. Program Planning and Evaluation LAB. (1). Prerequisite: HLTH 3105 and majors only. Corequisite: HLTH 4105. Activities designed to complement HLTH 4105. Meets once a week for 1.5 hours. (*Spring*)

HLTH 4210. Health Promotion and Risk Reduction. (3) Overview of health promotion and risk reduction techniques, including theories, strategies, and statistics. *(On demand)*

HLTH 4220 Mental and Emotional Well-being. (3) Examination of mental and emotional health from a wellness perspective. *(On demand)*

HLTH 4230. Drugs and Society. (3) Examination of use, misuses, and abuse of natural and synthetic chemicals in today's society, including prevalence, risk factors, and prevention strategies. *(On demand)*

HLTH 4240 Injury Prevention through the Life Span. (3) Introduction to intentional and unintentional injuries, including prevalence, risk factors, and prevention strategies. *(On demand)*

HLTH 4250. Adolescent Health and Sexuality. (3) Examination of adolescent health sexuality issues in today's society. *(On demand)*

HLTH 4260. Women: Middle Age and Beyond. (3) Crosslisted as GRNT 4260 and WMST 4260. Position of older women in society and the particular problems of and issues for women as they age with special attention to health issues. *(On demand)*

HLTH 4270. Health Consumerism. (3) Examination of individual health consumer issues in the health marketplace. *(On demand)*

HLTH 4280. Global Health Issues. (3). Introduction to current issues in global health including disparities, root causes, and strategies for resolution. (*Fall or Spring*)

HLTH 4290. Health Management Information Systems. (3) Overview of the technical, organizational, and management issues confronted by healthcare professionals in the selection, implementation, and management of healthcare information systems. *(On demand)*

HLTH 4400. Internship. (3) (W) Prerequisite: Majors only and permission of the instructor. Practical experience in a public health setting that complements students' academic and professional goals. Arranged with Coordinator. *(Fall, Spring, Summer)*

HLTH 4600. Capstone. (3) (W) Prerequisite: Majors only and permission of the instructor. A culminating project or experience encompassing the five areas of public health: health behavior, environmental health, biostatistics, epidemiology, and health administration, that complements students' academic and professional goals. Arranged with Coordinator. *(Fall, Spring, Summer)*

HLTH 4800. Independent Study. (1-6) Prerequisites: Permission of the instructor. Directed individual study that may take the form of initiating, designing, and/or conducting an original community-based or research project, or critique and synthesis of existing community or research issues. May be repeated for credit. *(On*

demand)

HLTH 4900. Undergraduate Research. (1-4) Prerequisite: Permission of the instructor. Opportunity for advanced undergraduate students to work on community or research projects conducted by faculty in their field of interest. May be repeated for credit. *(On demand)*

UNIVERSITY HONORS PROGRAM (HONR)

All courses require permission of the University Honors Program.

HONR 1100. Freshman Honors Seminar. (1). Prerequisite: Freshman standing in the University Honors Program. A course designed to introduce university honors students to scholarship, service, and leadership opportunities in the honors program, the university, and larger community. Class activities will include guest speakers, projects, and workshops. Students will create a final portfolio. *(Fall)*

HONR 1701. War, Peace, Justice and Human Survival. (3) Crosslisted as LBST 2101 Honors Section only. The relationships between individual and local, state, and global values are examined within the context of war, peace and justice. Special emphasis is placed upon problems emergent with the introduction of nuclear weapons and the threat of nuclear war.

HONR 1702. Economic Welfare and International Communities. (3) (W) Crosslisted as LBST 2102 Honors Section only. Study of the impact of economic institutions on international communities. Focus on development theories, multinational institutions, international debt, and Third World response, international poverty and income distribution and the economic impact on international communities of military spending.

HONR 2701. Enrichment Seminar. (2) Students attend a variety of events from the visual arts and performing arts as well as special lectures. Through direct contact, this course is intended to introduce students to events, both contemporary and traditional, to which they would not otherwise be exposed. May be repeated for credit as topics and course work may vary. *Offered on a Pass/No Credit basis.*

HONR 2750. Community Service Laboratory. (1) The purpose of this laboratory experience is to investigate and demonstrate how individuals can make a difference in the human condition. Students enrolled attend weekly seminar meetings. Relationships between the volunteer individual and community agencies served are examined within the context of problem-solving strategies and social/political justice. Impact of volunteerism upon human rights is explored. May be repeated for credit as topics and course work may vary.

HONR 3700. University Honors Topics. (3) A small discussion-oriented class taught by faculty members from different disciplines on interdisciplinary topics. May be repeated for credit as topics and course work may vary. *(On demand)*

HONR 3701. Science, Technology and Human Values. (3) Crosslisted as LBST 2213 Honors section only. A study of historical and contemporary issues in the relationship between science and technology, on the one hand, and ethical, religious and social concerns on the other hand.

HONR 3702. Seminar in Cultural Values and Social Issues. (3) (W) An examination of social and cultural topics using a writing-intensive and interdisciplinary approach. May be repeated for credit as topics and course work may vary.

HONR 3750. Washington Experience. (3) A seminar-style, variable topics course, to be taught in Washington, D.C. as a part of the *UNC in Washington Program.* The course will explore the role of a national capital in the determination of public policy and national culture in a diverse democracy using Washington, D.C. as text. Enrollment limited to students currently participating in the *UNC in Washington Program* (completion of this course is considered to be in residence). *(Fall, Spring, Summer)*

HONR 3790. University Honors Thesis. (3) Prerequisites: Six hours of Honors course work and permission of thesis director and University Honors Committee. Honors project directed by faculty member. Students may also present thesis ideas for group discussion and critical feedback. May be repeated for credit.

INTERNATIONAL BUSINESS (IBUS)

IBUS 3000. Topics in International Business. (3) Prerequisites: Permission from the Director of Undergraduate International Business Programs. Topics from areas of international business. This course may be repeated for credit as topics vary. *(On demand)*

IBUS 3400. International Business Internship. (3) Prerequisites: This course is open to junior and senior International Business majors in good standing. It requires permission of the Director of Undergraduate International Business Programs (UIBP). The internship provides a meaningful work experience in a field of International Business. Internship proposals can be initiated by the student or by the Director of UIBP. The internship requires 150 hours of supervised employment. Interested students should consult the UIBP Director to discuss availability of positions. An internship proposal form, available from the UIBP Director, must be completed and approved prior to registration. The internship will be graded on a Pass/No Credit basis. IBUS 3400 cannot be repeated for credit or taken for credit at the same time or following any other internship for credit. *(Fall, Spring, Summer)*

MANAGEMENT INFORMATION SYSTEMS (INFO)

INFO 2130. Introduction to Business Computing. (3) Introduction of computer methods to solve business problems. Emphasis on understanding fundamental hardware and software concepts, selecting and using appropriate hardware and software needed for making various business decisions, and developing practical methods for using the computer to solve quantitative business problems. (May not be taken for upper-level credit in business, but may be taken for general University credit.) *(Fall, Spring, Summer) (Evenings)*

INFO 2231. Introduction to Business Programming. (3) Crosslisted as ITCS 2231. Pre/corequisite: INFO 2130 or permission of the department. This course focuses on the examination of business problems, the extraction of the logic and business rules, and the relationship between business logic, programming constructs and technologies for decision support. *(Fall, Spring, Summer)*

INFO 3000. Topics in Management Information Systems. (3) Prerequisite: INFO 3233 with a C or better. Topics from the area of Management Information Systems. May be repeated for credit. (*On demand*)

INFO 3130. Management Information Systems. (3) Prerequisites: FINN 3120; OPER 3100; MGMT 3140, MKTG 3110, Junior standing. Impact of information systems on management decision-making activities. Principles of the structure and analysis of information flows within an organization. Emphasis on database accumulation and generation, capabilities of information processing, system function (e.g. file creation, report generation, etc.) and evaluation and modification of information systems. (*Fall, Spring, Summer) (Evenings*)

INFO 3200. Foundations in Business Computing. (3) Introduction to computer systems in business with emphasis on the capabilities of computer systems (hardware & software) and skills needed to effectively use computerized decision tools for typical business problems. (Cannot be taken for credit toward any undergraduate degree within the Belk College of Business.) *(On demand)*

INFO 3211. Technical Support. (3) A study of technical support and help desk concepts. Emphasis on building skill sets in diagnosing and solving user and software related problems. Topics include support management techniques, help desk operations, and support performance evaluation. *(Spring)*

INFO 3223. Business Database Systems. (3) Pre/corequisite: INFO 3231 with a C or better, or permission of department. A study of the effective management and utilization of organizational data resources in order to design and implement database management systems (DBMS) for business applications. Exploration of basic concepts of database systems and use of the computer to build and manipulate corporate databases. *(Fall, Spring)*

INFO 3229. Business Data Communications. (3) Prerequisites: INFO 3231 with a *C* or better. A study of the current and potential impact of computer data communications technologies on business operations and productivity. Topics include identifying the need for and designing, planning and implementing of system solutions in such areas as text preparation and dissemination, document storage and retrieval, data communication technologies, telecommuting and teleconferencing, data communication networks, messaging and scheduling. (*Fall, Spring)*

INFO 3231. Business Applications Development. (3) Prerequisites: MATH 1120; STAT 1220; ACCT 2121, 2122; ECON 2101, 2102; INFO 2130; INFO/ITCS 2231 with a C or better and junior standing or permission of the department. A study in the development of business applications software. Course emphasizes graphical user interface development using object-oriented, event-driven programming methods and techniques with a high-level development tool such as Visual Basic or Java. *(Fall, Spring)*

INFO 3232. International Information Systems Management. (3) Prerequisite: ITCS/INFO 2231 with a C or better and junior standing or permission of department. Study of issues and challenges relating to International Information Systems. Topics include: planning and strategic implications of using global information systems and technology; management of global information flows; and, the problems of integrating technology, systems, and people across the globe. *(On demand)*

INFO 3233. Business Database Systems. (3) Prerequisite/Corequisite: INFO 3231-Business Application Development with a C or better, or permission of the Department. A study of the effective management and utilization of organizational data resources in order to design and implement database management systems (DBMS) for business applications. Exploration of basic concepts of database systems and use of the computer to build and manipulate corporate databases. *(Fall, Spring)*

INFO 3234. Business Information Systems Development. (3) Prerequisites: INFO 3231 with a *C* or better and INFO 3233 with a *C* or better, or permission of the Department. Examination of the systems development process from the perspective of the systems analyst to provide an understanding of concepts, processes and techniques as they are applied to the systems development life cycle. Emphasis on the use of structured and object-oriented techniques to manage the complexities involved in the analysis phase of systems development. (*Fall, Spring*)

INFO 3235. Advanced Business Information Systems Development. (3) Prerequisites: INFO 3234 with a *C* or better. Development of Business Information Systems. Emphasis on the development of computer applications as products of the systems development life cycle including the design and implementation phases of systems development, as accomplished through a major class project. (*Fall, Spring*)

INFO 3236. Business Decision Support Systems. (3) Prerequisites: INFO 3231, INFO 3233, and OPER 3100 or permission of the Department. A study of the application of the computer to middle and upper-level management processes to provide computer skills needed to implement such applications. Reading, discussion, and hands-on computer projects. *(On demand)*

INFO 3238. Current Issues in The Management of Information Systems. (3) Prerequisites: INFO 3130, MGMT 3140 or permission of the Department. Information systems and the management of information in an organization to provide exposure to the decision challenges presented to the corporate manager by the rapid development of information technology and to suggest useful constructs for dealing with them. An integrated, interactive approach to decision making. *(On demand)*

INFO 3240. Fundamentals of eBusiness. (3) Prerequisites: INFO 3234; or permission of the department. A study of the evolving information technologies facilitating electronic business (eBusiness) and the business practices and strategies used to compete in the new wired global marketplace. Topics include the infrastructure for eBusiness, new business strategies and models, web design, and management strategies, and an exploration of a variety of technologies involved in eBusiness. *(Fall, Spring)*

INFO 3500. Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the Department's cooperative education and 49ership students during any semester they are working in a position.. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (*Spring, Summer, Fall*)

INFO 3800. Directed Study. (1-6) Prerequisites: Permission of the department and junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. (*On demand*)

INTERNATIONAL STUDIES (INTL)

INTL 1101. Introduction to International Studies. (3) An introductory, interdisciplinary survey of the field of international studies. Attention will focus on the economic, geo-political and socio-cultural issues affecting relationships in an increasingly interdependent global system. *(Fall, Spring)*

INTL 2101. Introduction to African Studies. (3) Crosslisted as HIST 2211/AFRS 2221. A survey of major developments in 19th and 20th century Sub-Saharan Africa, with emphasis on the European conquest, the colonial period, and the triumph of modern African nationalism. *(Fall)*

INTL 2201. Introduction to Asian Studies. (3) Crosslisted as HIST 2201. Focus on the rise of modern Asia from the period just prior to the armed intervention of Western European nations. Emphasis will be placed on the impact of imperialism, colonialism, and the rise of Asian nationalism on Asian societies. *(Spring)*

INTL 2301. Introduction to European Studies. (3) Crosslisted as HIST 3116. Causes and results of World War I, rise of new governments, collapse of collective security, World War II and the post-war period. *(Fall)*

INTL 2401. Introduction to Latin American Studies. (3) Crosslisted as HIST 2207. A survey of Latin American history from 1826 to the present with emphasis on the economy and society. Special attention to twentieth-century revolutions and the role of the United States in Latin America. *(Spring)*

INTL 3000. Topics in International Studies. (1-3) Analysis of a selected topic related to international studies. The particular topic of the course may vary from semester to semester. A student may repeat the course for credit as topics vary. *(On demand)*

INTL 3111. Politics and Culture in Literature. (3) (W) An exploration of different types of political systems across the world and the ways in which the cultures and values of those systems are reflected in literature. The relationship between politics and literature will be examined with particular reference to such topics as human rights, gender roles and war. The political systems selected for consideration will be representative of different geographic regions and philosophies. *(Yearly)*

INTL 3112. Globalization and Culture. (3) Crosslisted as ANTH 3112. This course explores the relationship between processes of globalization and cultural change. It will consider the breakdown of the connection between lived cultural experience and territorial location. Of special interest will be issues of cultural homogenization, cultural hybridization and emergent cultural identities brought about by the flows of people, ideas and objects in the contemporary world. *(Yearly)*

INTL 3120. Women's Studies International. (3) Crosslisted as WMST 4120. This course will explore policies affecting women's lives across international borders and will look at a range of topics from divorce, marriage, violence against women and abortion to work and poverty. *(Fall)*

INTL 3131. Diplomacy in a Changing World. (3) Crosslisted as POLS 3159. Diplomacy, a means to resolve disputes between sovereign states short of war, will be analyzed through case studies drawn from historical context and through a survey of contemporary crises. The American diplomatic process will also be reviewed with particular attention to how policy is shaped, how an embassy functions and how Americans train for the professional diplomatic service. *(Yearly)*

INTL 3151. International Political Economy. (3) Crosslisted as POLS 3151. An analysis of the political dynamics of economic relationships among countries. Attention is focused on the political aspects of monetary, trade and investment relationships, and the difficulties involved in coordinating policy and maintaining effective international management. *(Yearly)*

INTL 3400. International Studies Internship. (1-3) Prerequisite: Permission of the Director. Practical experience and/or training related to the field of international studies. A minimum of 45 hours per credit. *(Fall, Spring)*

INTL 3800. Independent Study. (1-3) Prerequisite: Permission of the Director. Supervised investigation of an issue related to the field of international studies that is of special interest to the student and that is not covered in existing or available courses. *(Fall, Spring)*

INTL 4601. International Studies Seminar. (3) (W, O) Prerequisite: advanced junior or senior class status. A capstone seminar involving in-depth research and analysis of topics of common interest to all majors, yet specific to each student's area studies concentration. *(Fall, Spring)*

COMPUTER SCIENCE (ITCS)

ITCS 1101. Introduction to Computer Concepts. (3) Prerequisite or corequisite: MATH 1100 OR MATH 1101 OR MATH 1103 OR MATH 1120 OR MATH 1241. Introductory course that gives an overview of computer hardware and software. Primary emphasis is on productivity software (word processing, spreadsheet, and graphical presentation). These applications are taught through a series of projects/assignments. Aspects of Internet research are also covered. *(Fall, Spring, Summer) (Internet)*

ITCS 1102. Advanced Internet Concepts. (3) Crosslisted as ITIS 1102. Prerequisite: ITCS 1101 or permission of the department. This course is an advanced study of the Internet environment. This course is designed for any student who is familiar with office productivity tools and a user of Internet technologies; it addresses advanced concepts of computer literacy. Topics include: concepts of website design and how to evaluate websites; proper use of synchronous and asynchronous communication tools (e.g., chat, email, IM); issues of copyright and cyber-ethics; using the Internet to do research; and publishing via the Internet. Other topics may be added to keep the content current and relevant. Students will complete extensive Internet oriented projects to demonstrate mastery of the skills discussed in class. (May not be taken for credit by ITIS majors.) *(Fall, Spring, Summer)(Internet)*

ITCS 1200. Freshman Seminar (3) Crosslisted as ITIS 1200. Prerequisite: permission of department. An introductory Information Technology course designed to assist students with the transition to college by acquainting them with the University's resources and support, exploring opportunities in the IT field, and developing a strong sense of community within the College of Computing and Informatics and the University as a whole. The development of learning skills, time management skills, and other life skills necessary for college success will be emphasized. *(Fall)*

ITCS 1203. Survey of Computing. (3) Crosslisted as ITIS 1203. Introductory course that explores the broad field of computing as it applies to daily life. Topics cover computers of all sizes from handheld devices to super computers; the role of software from operating systems to applications; the software development process; issues of security and privacy on the Internet and the World Wide Web; and possible fields of study within the broad field of information technology. *(Fall, Spring)*

ITCS 1214. Introduction to Computer Science. (3) Prerequisite or corequisite: MATH 0900 or MATH 1100 or MATH 1103 or MATH 1120 or MATH 1241. Introduction to algorithmic problem solving strategies and algorithm development; basic concepts and terminology of computers; study of data representation and number systems; use of computers to implement numerical and symbolic algorithms. General programming concepts will be taught through the use of a high level language. *(Fall, Spring, Summer) (Evenings) (Internet)*

ITCS 1215. Introduction to Computer Science II. (3) Prerequisite: ITCS 1214 with a grade of C or better, or permission of the Department. An advanced study of programming based on object oriented concepts. Extends the fundamentals studied in ITCS 1214. Includes a study of software design tools and advanced programming constructs, such as UML diagrams, decision tables, recursion, and dynamic storage allocation. Concepts are taught be means of an in-depth study of an object oriented language. *(Fall, Spring, Summer) (Evenings) (Internet)*

ITCS 2050. Topics in Computer Science. (1-3) Prerequisite: Permission of the department. Topics in computer science selected to supplement the regular course offerings at the 2000 level. (May be repeated for credit with the permission of the department. A student may register for multiple sections of the course with different topics in the same semester or in different semesters.) *(On demand)*

ITCS 2116. C Programming. (3) Prerequisite: Knowledge of any other computer programming

language or permission of the department. A study of the programming language C. Data types, operators, functions, program structure, file I/O, storage classes, exceptions, concurrent programming, and the preprocessor. *(Summer) (Evenings)*

ITCS 2163. Introduction to File Processing. (3) Prerequisite: ITCS 1215. Concepts and techniques of structuring data on external storage devices; provides the foundation for applications of data structures and file processing techniques. *(Fall, Summer) (Evenings)*

ITCS 2175. Logic and Algorithms. (3) Prerequisites: ITCS 1214 and (MATH 1120 or MATH 1241). Introduction to propositional calculus, predicate calculus, algorithms, logic functions, finite-state machines; logic design. *(Fall, Spring, Summer) (Evenings) (Internet)*

ITCS 2181. Computer Logic and Design. (3) Prerequisite: ITCS 1214 or permission of the department. Logic design; logic circuits; state diagrams; Karnaugh maps; memories; tristate devices; bus structures; and data control concepts. *(Fall, Spring, Summer) (Evenings)*

ITCS 2214. Data Structures. (3) Prerequisite: ITCS 1215 with a grade of C or better, or permission of the Department. A study of the theory and implementation of abstract data types (ADTs) including stacks, queues, and both general purpose and specialized trees and graphs. Programming emphasis is on the use of an object-oriented language to implement algorithms related to the various data structures studied including creation, searching, and traversal of ADTs. *(Fall, Spring, Summer) (Evenings) (Internet)*

ITCS 2215. Design and Analysis of Algorithms. (3) Prerequisites: (MATH 1120 or 1241) and (ITCS 2175 or MATH 1165) and ITCS 2214. Introduction to the design and analysis of algorithms. Design techniques: divide-and-conquer, greedy approach, dynamic programming. Algorithm analysis: asymptotic notation, recurrence relation, time space complexity and tradeoffs. Study of sorting, searching, hashing, and graph algorithms. *(Fall, Spring, Summer) (Evenings) (Internet)*

ITCS 2231. Introduction to Business Programming. (3) Crosslisted as INFO 2231. Pre/corequisite: INFO 2130 or permission of the department. This course focuses on the examination of business problems, the extraction of the logic and business rules, and the relationship between business logic, programming constructs and technologies for decision support. *(Fall, Spring, Summer) (Internet)*

ITCS 3050. Topics in Computer Science. (1-3) Prerequisite: Permission of the department. Topics in computer science selected to supplement the regular course offerings at the 3000 level. (May be repeated for credit with the permission of the department. A student may register for multiple sections of the course with different topics in the same semester or in different semesters.) *(On demand)*

ITCS 3110. Compiler Construction. (3) Prerequisites: ITCS 2215. Review of programming language structures, translation, loading, execution, and storage allocation. Compilation of simple expressions and statements. Organization of a compiler, including compile-time and run-time tables, lexical scan, syntax scan, object code generation, error diagnostics, object code optimization techniques, and overall design. Use of compiler writing languages and boot strapping. *(On demand)*

ITCS 3112. Design and Implementation of Object-Oriented Systems. (3) Prerequisite: ITCS 2215. In-depth exploration of object-oriented programming and system development. Topics include: evolution of object-oriented methodology; concept of the object-oriented approach; object-oriented programming languages; object-oriented analysis and design; the design of software for reuse; and incremental software development. *(Spring) (Evenings)*

ITCS 3123. Introduction to Numerical Methods. (3) Prerequisites: ITCS 2214 AND (MATH 1241 or MATH 1120). General concepts of scientific computing and their applications to such areas as non-linear equations, numerical integration, spline and polynomial interpolation, and initial value problems. *(On demand)*

ITCS 3134. Digital Image Processing. (3) Prerequisites: ITCS 2214, MATH 1242, and MATH 2164, with grades of *C* or better. Overview of fundamentals of image acquisition, representation, enhancement, segmentation, reconstruction, analysis and recognition. Image generation, viewing and perception; image transformations using the Fourier transform; spatial operations and filtering (spatial and frequency domain); image coding; lossless and lossy compression; boundary and region based segmentation; thresholding and classification; boundary and regional image descriptors; matching and neural networks; shape numbers. *(Spring) (Evenings)*

ITCS 3143. Operating Systems. (3) Prerequisite: ITCS 2214 or permission of the department. Introduction to multiprogramming operating systems. Process synchronization and management of memory, devices, and files; performance evaluation. *(Fall, Spring, Summer) (Evenings)*

ITCS 3152. Symbolic Programming. (3) Prerequisite: ITCS 2214. Basic concepts of symbolic programming including selected topics in artificial intelligence, heuristic searching, symbolic algebra, language parsing, and theorem proving. *(Fall) (Evenings)*

ITCS 3153. Introduction to Artificial Intelligence. (3) Prerequisite: ITCS 3152 or permission of the department. Basic concepts of artificial intelligence. Topics include: defining the problem as a state space search, production systems; heuristic search; basic problem-solving methods; game playing; knowledge representation using predicate logic, semantic nets, frames, and scripts; non-monotonic reasoning, statistical and probabilistic reasoning. *(Spring) (Evenings)*

ITCS 3155. Software Engineering. (3) Prerequisite: ITCS 1215 or permission of the department. The system development cycle is examined in detail from the aspects of software engineering. Current tools and techniques of systems design-data dictionary, data flow diagrams, structured walkthroughs, and capacity planning will be taught and presented in conjunction with case studies and class problems. *(Fall, Spring, Summer) (Evenings)*

ITCS 3160. Data Base Design and Implementation. (3) Prerequisite: ITCS 1215 or permission of the department. Logical and physical database organization, data models, design issues, and secondary storage considerations. Emphasis on actual participation in the design and implementation of databases. (*Fall, Spring*) *(Evenings)*

ITCS 3166. Introduction to Computer Networks. (3) Prerequisite: ITCS 1215 or permission of the Department. Internet architecture and protocols. Distributed vs. centralized processing. Data communications; speed; capacity; media, protocols. Network architectures. Evaluation of alternatives. Case studies. *(Fall, Spring, Summer) (Evenings)*

ITCS 3170. Applied Scientific Computing. (3) Prerequisites: MATH 2164 or its equivalent. Topics include: Concepts of continuous and discrete signals; continuous Fourier transform and its applications in multimedia processing; discrete Fourier transform and its applications in arts and multimedia processing; fundamentals of stochastic systems; fundamentals of ordinary differential equations; applications of differential equations in modeling; wavelet transform and its applications in music and multimedia processing; fundamentals of fractals and their application in arts and science; classification and clustering. *(On demand)*

ITCS 3182. Computer Organization and Architecture. (3) Prerequisite: ITCS 2181 or ECGR 2181. Machine level representation of data; von Neumann architecture; instruction sets and types; addressing types; assembly and machine language programming; control unit and microprogramming; alternate architectures. *(Fall, Spring, Summer) (Evenings)*

ITCS 3183. Hardware System Design. (3) Prerequisite: ITCS 3182 or permission of the department. Design of hardwired control systems; processors and memory systems; application specific design; use of simulation tools. Laboratory intensive course. *(Spring) (Evenings)*

ITCS 3216. Introduction to Cognitive Science. (3) Crosslisted as PSYC 3216. Prerequisite: Permission of the department. Interdisciplinary introduction to the science of the mind. Broad coverage of such topics as philosophy of mind, human memory processes, reasoning and problem solving, artificial intelligence, language processing (human and machine), neural structures and processes, and vision. *(Spring, Odd years)*

ITCS 3590. Computer Science Cooperative Education and 49ership Experience. (0) This course is required of Co-op and 49ership students during the semester they are working. Acceptance into the Experiential Learning Program is required. Participating students pay a course registration fee for transcript notation. Assignments must be arranged and approved in advance. Course may be repeated. Evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. *(Fall, Spring, Summer)*

ITCS 3688. Computers and Their Impact on Society. (3) (O, W) Prerequisite: Junior standing and permission of the department. A study of current topics (software piracy, hacking, professional conduct) in computer science and the impact of computers on various subsets (home, government, and education) of society. *(Fall, Spring) (Evenings)*

ITCS 3690. Seminar. (1-6) Prerequisite: Permission of the department. May be repeated for credit. *(On demand)*

ITCS 3691. Seminar. (1-6) Prerequisite: Permission of the department. A continuation of ITCS 3690. May be repeated for credit. *(On demand)*

ITCS 3695. Computer Science Cooperative Education Seminar. (1) Required of Co-op students immediately following each work assignment for presentation of reports on work done the prior semester. *(Fall, Spring, Summer)*

ITCS 3699. Senior Seminar. (1-3) Prerequisites: Senior standing and permission of the department. Each participant will prepare a lecture on a topic in computer science. Emphasis will be on communication of technical information as well as on content of the presentations. May be repeated for credit. *(On demand)*

ITCS 4010. Topics in Computer Science. (1-3) Prerequisite: Permission of the department. Topics in computer science selected to supplement the regular course offerings at the 4000 level. (May be repeated for credit with the permission of the department. A student may register for multiple sections of the course with different topics in the same semester or in different semesters.) *(On demand)*

ITCS 4102. Programming Languages. (3) Prerequisite: ITCS 2215. Formal definition of programming languages, including specification of syntax and semantics. Evolution of programming languages and language design principles. Structural organization, control structures, data structures and types, name visibility, binding times, parameter passing modes, subroutines, coroutines, and tasks. Functional programming, list processing, logic programming, object-oriented programming systems. *(Fall, Spring, Summer) (Evenings)*

ITCS 4107. Formal Languages and Automata. (3) Prerequisite: MATH 1165 or ITCS 2175. Detailed study of abstract models for the syntax of programming languages and information processing devices. Languages and their representation; grammars, finite automata and regular sets; context-free grammars and pushdown automata; Chomsky Hierarchy; closure properties of families of languages; syntax analysis. *(On demand)*

ITCS 4112. Software System Design and Implementation. (3) Prerequisite: Permission of the department. Introduction to the techniques involved in the planning and implementation of large software systems. Emphasis on human interface aspects of systems. Planning software projects; software design process; top-down design; modular and structural design; management of software projects; testing of software; software documentation; choosing a language for software system. *(Fall, Spring) (Evenings)*

ITCS 4120. Introduction to Computer Graphics. (3) Prerequisites: ITCS 2214 and MATH 2164 or permission of Department. Graphics hardware; raster algorithms; geometric transformations; 2D/3D interactive graphics; 3D viewing and perspective projections; color and lighting models; hidden surface removal; modeling hierarchies; fractals; curved surfaces. *(Fall) (Evenings)*

ITCS 4121. Information Visualization. (3) Prerequisites: ITCS 1215 or approval of the instructor. Information visualization concepts, theories, design principles, popular techniques, evaluation methods, and information visualization applications. *(Spring) (Evenings)*

ITCS 4122. Visual Analytics. (3) Prerequisite: any of STAT 1220, 1221, 1222, 2122, or 2223, or approval of the instructor. This course introduces the new field of visual analytics, which provides tools for the interactive visual analysis of large and complex data sets in many application areas. Topics include: visual representation, perception, the analysis process, critical thinking, data transformations, color, interaction, and applications. *(Fall) (Evenings)*

ITCS 4123. Visualization and Visual Communication. (3) Prerequisites: none. Understanding the relatively technical field of visualization from the point of view of visual communication; this course draws connections with photography, design, illustration, aesthetics, and art. Both technical and theoretical aspects of the various fields are covered, and the connections between them are investigated. *(Spring) (Evenings)*

ITCS 4128. Programming Languages and Compilers. (3) Prerequisite: ITCS 2214. Introduction to the concepts and techniques used in describing, defining, and implementing programming languages and their compilers. Introduction to parsing and parser construction; LL and LR grammars; syntax directed translation; data object representations; run time structures; intermediate languages; code optimization. *(On demand)*

ITCS 4130. Computer Graphics. (3) Prerequisites: ITCS 2215 and MATH 2164. Implicit and parametric representation; cubic surfaces; advanced reflection models; global illumination models - ray tracing, radiosity; shadow algorithms, texture mapping; volumetric modeling and rendering techniques; animation; advanced modeling techniques; particle systems, fractals. *(On demand)*

ITCS 4131. Simulation. (3) Prerequisites: MATH 3122 or permission of Department. Emphasis on the design and derivation of mathematical models of dynamic systems; deterministic simulation; random events; non-deterministic simulation; discrete simulation; comparison and optimization. *(On demand)*

ITCS 4133. Numerical Computation Methods and Analysis. (3) Prerequisites: ITCS 2214 and either MATH 1120 or MATH 1241. Introduction to principles and techniques behind numerical methods and algorithms that underlie modern scientific and engineering applications. Roots of equations: linear systems (direct methods, LU/QR factorization, iterative methods); Eigen values and vectors; Interpolation, Approximation; Numerical Differentiation/Integration, ODEs and PDEs. *(On demand)*

ITCS 4141. Computer Organization and Architecture. (3) Prerequisite: ITCS 3182 or equivalent. Fundamentals of computer design; instruction set design, basic processor implementation techniques; pipelining; memory hierarchy; Input/Output. Cost/performance and hardware/software trade-offs. *(Fall) (Evenings)*

ITCS 4145. Parallel Computing. (3) Prerequisites: ITCS 2214 and ITCS 3182. Types of parallel computers, programming techniques for multiprocessor and multicomputer systems, parallel strategies, algorithms, and languages. *(Fall) (Evenings)*

ITCS 4146. Grid Computing. (3) Prerequisite: ITCS 1215. Grid computing software components, standards, web services, security mechanisms, schedulers and resource brokers, workflow editors, grid portals, grid computing applications. *(Spring)*

ITCS 4151. Intelligent Robotics. (3) Prerequisites: ITCS 2214 and MATH 2164. General introduction to spatial descriptions and transformations, and manipulator position and motion. More study on robot planning, programming, sensing, vision, and CAD/CAM. *(On demand)*

ITCS 4152. Computer Vision. (3) Prerequisites: ITCS 2215 and MATH 2164. General introduction to computer vision and its application. Topics include low level vision, 2D and 3D segmentation, 2D description, 2D recognition, 3D description and model-based recognition, and interpretation. *(Fall) (Odd years)*

ITCS 4157. Computer-Aided Instruction. (3) Prerequisite: Permission of the department. History of CAI; study of current CAI systems; development of man-

machine dialogue; programming tools for CAI; information structures for computer-oriented learning. Advantages/disadvantages/costs of CAI. *(On demand)*

ITCS 4181. Microcomputer Interfacing. (3) Prerequisite: ITCS 3182 or ECGR 3181 or permission of the Department. Signal conditioning, A/D conversion, noise, transmission line effects, signal processing, D/A conversion and serial/parallel interfaces. *(Fall) (Even years) (Evenings)*

ITCS 4230. Introduction to Game Design and Development. (3) Prerequisite: ITCS 2215. Basic concepts and techniques for electronic game design and development. Topics include: game history and genres, game design teams and processes, what makes a game fun, level and model design, game scripting and programming including computer graphics and animation, artificial intelligence, industry issues, and gender and games. *(Fall)*

ITCS 4231. Advanced Game Design and Development. (3) Prerequisite: ITCS 4230. Advanced concepts and techniques for electronic game design and development. This course is a project-centered course where students explore complex gameplay and interactivity. The course explores topics from the introductory course in more depth, such as: applying software engineering techniques to developing games, advanced game programming and scripting, networking, graphics, physics, audio, game data structures and algorithms, and artificial intelligence. *(Spring)*

ITCS 4232. Game Design and Development Studio. (3) Prerequisites: ITCS 4120, ITCS 4231, and permission of instructor. Application of advanced concepts and techniques for electronic game design and development. Teams will use engineering techniques to incorporate game programming and scripting, networking, graphics, physics, audio, game data structures and algorithms, and artificial intelligence into an electronic game. Individuals will develop a complete portfolio of prior work and the class project. *(Spring) (Even years) (Evenings)*

ITCS 4235. Game Engine Construction. (3) Prerequisite: ITCS 4120 or permission of Department. Introduction to principles and techniques behind modern computer and console game engines. Graphics Rendering Pipeline (transformations, lighting, shading); 2D/3D Texture Mapping; Image Based Rendering; Spatial Structures and Acceleration Algorithms; Level of Detail; Collision Detection, Culling and Intersection Methods; Vertex/Pixel Shaders; Pipeline Optimization; Rendering Hardware. *(Spring) (Odd years) (Evenings)*

ITCS 4236. Artificial Intelligence for Computer Games. (3) Prerequisite: ITCS 3153. Application of advanced concepts and techniques in artificial intelligence for electronic game design and development. An investigation of the artificial intelligence techniques necessary for an agent to act, or appear to act, intelligently in interactive virtual worlds. Topics include uncertainty reasoning, machine learning, perception, knowledge representation, search, and planning. Emphasis will be on implementation and experimentation with the goal of building robust intelligent agents in interactive entertainment domains. Elements of multi-agent collaboration and the use of cognitive architectures in interactive computer games will also be discussed. *(On demand)*

ITCS 4237. Audio Processing for Entertainment Computing. (3) Prerequisite: MATH 1242, MATH 2164, and ITCS 2215 or equivalents. Introduction to the principles and applications of audio (digital signal) processing focusing on entertainment domains. Topics include: analysis of signals, transforms, digital filter design techniques, audio engine development, file encoding/decoding, spatial sound rendering, optimization, and advanced audio techniques. *(On demand)*

ITCS 4650. Senior Project. (3) Prerequisites: two ITCS/ITIS 3xxx/4xxx courses with a grade of C or better or permission of the department. An individual or group project in the teaching, theory, or application of computer science under the direction of a faculty member. Projects must be approved by the Department before they can be initiated. *(Fall, Spring, Evenings)*

ITCS 4651. Senior Project. (3) Prerequisite: ITCS 4650. A continuation of ITCS 4650. *(Fall, Spring, Evenings)*

ITCS 4681. Senior Design I. (3) Prerequisites: two ITCS/ITIS 3xxx/4xxx courses with a grade of C or better or permission of the department. An individual or group computer engineering design project under the direction of a faculty member. Projects must be approved by the Department before they can be initiated. *(Fall, Spring, Evenings)*

ITCS 4682. Senior Design II. (3) Prerequisite: ITCS 4681. A continuation of ITCS 4681. *(Fall, Spring) (Evenings)*

ITCS 4990. Undergraduate Research. (3) Prerequisite: Permission of the Department. This course consists of undergraduate research as part of a joint undergraduate/graduate research project using existing research laboratory facilities and materials. Course may be repeated in subsequent terms for a maximum of 6 hours total. *(Fall, Spring, Summer) (Evenings)*

SOFTWARE AND INFORMATION SYSTEMS (ITIS)

ITIS 1102. Advanced Internet Concepts. (3) Crosslisted as ITCS 1102. Prerequisite: ITCS 1101 or permission of the department. This course is an advanced study of the Internet environment. This course is designed for any student who is familiar with office productivity tools and a user of Internet technologies; it addresses advanced concepts of computer literacy. Topics include: concepts of website design and how to evaluate websites; proper use of synchronous and asynchronous communication tools

(e.g., chat, email, IM); issues of copyright and cyber-ethics; using the Internet to do research; and publishing via the Internet. Other topics may be added to keep the content current and relevant. Students will complete extensive Internet oriented projects to demonstrate mastery of the skills discussed in class. (May not be taken for credit by ITIS majors.) *(Fall, Spring)(Internet)*

ITIS 1200. Freshman Seminar (3) Prerequisite: permission of department. An introductory Information Technology course designed to assist students with the transition to college by acquainting them with the University's resources and support, exploring opportunities in the IT field, and developing a strong sense of community within the College of Computing and Informatics and the University as a whole. The development of learning skills, time management skills, and other life skills necessary for college success will be emphasized. *(Fall) (Days)*

ITIS 1203. Survey of Computing. (3) Crosslisted as ITCS 1203. Introductory course that explores the broad field of computing as it applies to daily life. Topics cover computers of all sizes from handheld devices to super computers; the role of software from operating systems to applications; the software development process; issues of security and privacy on the Internet and the World Wide Web; and possible fields of study within the broad field of information technology. *(Fall, Spring)*

ITIS 1210. Introduction to Web-Based Information Systems. (3) Introductory course in developing Web pages for both majors and non-majors. Topics include an introduction to the mechanisms by which the Internet and the World Wide Web operate, general concepts related to Web-based information systems, the design and construction of Web infrastructure including authoring tools, domain registration, legal and ethical considerations, and basic Web security. *(Fall, Spring) (Evenings)*

ITIS 2300. Web-Based Application Development. (3) Prerequisite: ITCS 1214, or permission of the department. Basic concepts for developing interactive web based applications; HTML, client side scripting, server side scripting, user interface design considerations, information security and privacy considerations, system integration considerations. Students will be required to develop working prototypes of web-based applications. *(Fall)*

ITIS 3100. Introduction to IT Infrastructure Systems. (3) Prerequisite: ITIS 2300. This course discusses methodologies, tools, and technologies that are important for understanding various IT infrastructure systems such as file storage services, email services, and web services. Focus will be placed on understanding widely-used network infrastructure services and systems, and acquiring basic knowledge in design practices and management of such systems. *Can serve as a prerequisite course for ITIS 3200, ITIS 4220. (Fall, Spring) (Evenings)*

ITIS 3106. Structured System Analysis and Design. (3) Prerequisite: ITCS 1215 or permission of the department. Structured systems development. Strategies and techniques of structured analysis and structured design to produce logical methodologies for dealing with complexity in the development of information systems. *(Summer) (Evenings)*

ITIS 3130. Human-Computer Interaction. (3) Prerequisite: Sophomore standing. Concepts of the design of the human-machine environment, with special emphasis on human-computer interaction and how people acquire, store, and use data from the environment and from computers. Topics include: analysis, creation and improvement of equipment and environment to make them compatible with human capabilities and expectation; analysis of existing equipment with respect to user usability and interfacing capabilities. *(Fall) (Evenings)*

ITIS 3131. Human and Computer Info Processing. (3) Prerequisite: ITIS 2300 or permission of the department. Overview of methods people use to acquire, store, and use the data they receive from the environment and their implementation of computers. Topics include: perception, pattern recognition, attention, memory, knowledge representation, language, and problem solving. *(On demand)*

ITIS 3132. Information Systems. (3) Prerequisite: ITIS 2300 or permission of the department. Analysis, design, implementation, and evaluation of information systems. Topics include: techniques of manipulating data; behavioral component of dealing with the user and integration of technology, procedures, and people. *(On demand)*

ITIS 3200. Introduction to Information Security and Privacy. (3) Prerequisite: ITCS 1215 or permission of the department. This courses provides an introductory overview of key issues and solutions for information security and privacy. Topics include security concepts and mechanisms; security technologies; authentication mechanisms; mandatory and discretionary controls; basic cryptography and its applications; intrusion detection and prevention; information systems assurance; anonymity and privacy issues for information systems.

ITIS 3300. Software Requirements and Project Management. (3) Prerequisite: ITIS 2300 or permission of the department. Introduction to requirement engineering and project management methodologies. Topics include: requirements elicitation, specification, and validation; structural, informational, behavioral, security, privacy, and computer user interface requirements; scenario analysis; application of object-oriented methodologies in requirements gathering; spiral development model; risk management models; software engineering maturity model; project planning and milestones; cost estimation; team organizations and behavior. Case studies will be used. *(On demand)*

ITIS 3310. Software Architecture and Design. (3) Prerequisite: ITCS 2214 or permission of the

department. Introduction to software design with emphasis on architectural design and design patterns. Models of software architecture. Architecture styles and patterns, including explicit, event-driven, client-server, and middleware architectures. Decomposition and composition of architectural components and interactions. Use of non-functional requirements for tradeoff analysis. Component based software development, deployment and management. A system design language, such as UML, will be introduced and used throughout the course.

ITIS 3320. Introduction to Software Testing and Assurance. (3) Prerequisite: ITIS 3200 and ITIS 3300 or permission of the department. Methods of evaluating software for correctness, and reliability including code inspections, program proofs and testing methodologies. Formal and informal proofs of correctness. Code inspections and their role in software verification. Unit and system testing techniques, testing tools and limitations of testing. Statistical resting, reliability models. *(Fall, Spring) (Evenings)*

ITIS 3590. Software and Information Systems Cooperative Education and 49ership Experience. (0) This course is required of Co-op and 49ership students during the semester they are working. Acceptance into the Experiential Learning Program is required. Participating students pay a course registration fee for transcript notation. Assignments must be arranged and approved in advance. Course may be repeated. Evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. *(Fall, Spring, Summer)*

ITIS 3695. Software and Information Systems Cooperative Education Seminar. (1) Required of Co-op students immediately following each work assignment for presentation of reports on work done the prior semester. *(Fall, Spring, Summer)*

ITIS 4166. Network-Based Application Development. (3) Prerequisite: ITIS 2300 and ITIS 3200 or permission of the department. This course examines the issues related to network based application development. Topics include introduction to computer networks, web technologies and standards, network based programming methodologies, languages, tools and standards. *(Fall, Spring) (Evenings)*

ITIS 4220. Vulnerability Assessment and Systems Assurance. (3) Prerequisite: ITIS 3200 or permission of the department. This course discusses methodologies, tools, and technologies that are important for vulnerability assessment and systems assurance. Topics covered include: ethical hacking techniques, vulnerability assessment, risk assessment/management, finding new exploits, discovering vulnerabilities, penetrating network perimeters, bypassing auditing systems, and assured administration of systems as well as evaluating systems assurance levels. Focus will be placed on 1) understanding current penetration techniques for networks, operating systems, services and applications; 2) investigating mitigation and defense strategies; and 3) studying legal and ethical considerations. the course is based on case studies with a strong lab component. *(Fall, Spring)*

ITIS 4250. Computer Forensics. (3) Prerequisites: ITIS 2300 or permission of the department. The identification, extraction, documentation, interpretation, and preservation of computer media for evidentiary purposes and/or root cause analysis. Topics include techniques for discovering digital evidence; responding to electronic incidents; tracking communications through networks; understanding electronic media, crypto-literacy, data hiding, hostile code and Windows™ and UNIX™ system forensics; and the role of forensics in the digital environment. (*On demand*)

ITIS 4990. Undergraduate Research. (3) Prerequisite: Permission of the department. This course consists of undergraduate research under the supervision and direction of a faculty member. Course may be repeated in subsequent terms for a maximum of 6 hours total. *(On demand)*

ITALIAN (ITLN)

ITLN 1201. Elementary Italian I. (3) Fundamentals of the Italian language, including speaking, listening comprehension, reading, and writing. (*Fall*)

ITLN 1202. Elementary Italian II. (3) Prerequisite: ITLN 1201 or permission of the Department. Fundamentals of the Italian language, including speaking, listening comprehension, reading, and writing. (*Spring*)

ITLN 2201. Intermediate Italian I. (3) Prerequisite: ITLN 1202 or permission of the Department. Review of grammar, conversation, and composition. (*On demand*)

ITLN 2202. Intermediate Italian II. (3) Prerequisite: ITLN 2201 or permission of the Department. Continued review of grammar, conversation, and composition. (*On demand*)

JAPANESE (JAPN)

JAPN 1201. Elementary Japanese I. (4) Acquisition of communicative competence in speaking, listening comprehension, reading, and writing at a beginning level, with attention to cultural awareness. *(Fall, Spring, Summer)*

JAPN 1202. Elementary Japanese II. (4) Prerequisite: JAPN 1201 or permission of the Department. Continuation of JAPN 1201. *(Fall, Spring, Summer)*

JAPN 2201. Intermediate Japanese I. (4) Prerequisite: JAPN 1202 or permission of the Department. Acquisition of communicative competence in speaking,

listening comprehension, reading, and writing at an intermediate level, with attention to cultural awareness. *(Fall, Spring)*

JAPN 2202. Intermediate Japanese II. (4) Prerequisite: JAPN 2201 or permission of the Department. Continuation of JAPN 2201. *(Fall, Spring)*

JAPN 3201. Advanced Japanese Grammar, Composition and Conversation I. (4) Prerequisite: JAPN 2202 or permission of the Department. Review of Japanese grammar and guided conversation on prepared topics. Emphasis on spoken Japanese. *(Fall, Spring)*

JAPN 3202. Advanced Japanese Grammar, Composition and Conversation II. (4) Prerequisite: JAPN 3201 or permission of the Department. Review of Japanese grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. *(Fall, Spring)*

JAPN 3209. Japanese Civilization and Culture. (3) Conducted in English. No knowledge of Japanese required. Geographical, historical, and artistic features of Japanese culture as well as aspects of life, thought, and customs of the Japanese-speaking people. Presentations, discussions, and viewing of films. *(Fall, Spring)*

JAPN 3210. Advanced Japanese Civilization, Culture, and History. (3) Prerequisite: JAPN 2202 or permission of the department. Advanced study of life and thought of Japanese-speaking people. *(Fall, Spring)*

JAPN 3800. Directed Individual Study. (1-3) Prerequisite: permission of the Department. Individual work on a selected area of study with the instructor, generally arranged during the preceding semester. May be repeated for credit. *(Fall, Spring)*

JAPN 4410. Professional Internship in Japanese. (1-6) Prerequisites: JAPN 3201 and 3202, or equivalent and permission of the department. Faculty-supervised field and/or research experience in a cooperating professional (e.g., business) or community organization (e.g., school). Contents of internship based upon a contractual agreement among the student, department, and business or community organization. *(Fall, Spring, Summer)*

JOURNALISM (JOUR)

JOUR 2160. Introduction to Journalism. (3) Introduction to the basics of print journalism. Students cover a variety of stories designed to develop news and feature reporting/writing skills. Emphasis is placed on generating story ideas, making ethical news judgments, diversity issues in journalism, gathering information, and writing and editing articles. Students are also introduced to Associated Press style. *Restricted to Pre-Communication and Communication Studies majors, and Journalism minors. (Fall, Spring, Summer)*

JOUR 3050. Topics in Journalism. (3) Prerequisite: JOUR 2160. Timely and important areas relevant to journalism. May be repeated with permission of journalism advisor. *(On demand)*

JOUR 3160. Advanced News Reporting and Writing. (3) Prerequisite: JOUR 2160 or permission of the instructor. This advanced journalism course continues the study of reporting and writing techniques introduced in JOUR 2160. Course covers news reporting and writing, with emphasis on the print media. Students survey a variety of news sources to become familiar with current events and the various approaches and styles of coverage. *(Fall, Spring)*

JOUR 3161. News Editing. (3) Prerequisite: JOUR 2160 or permission of instructor. Basic studies in selection, preparation and presentation of news, with primary emphasis on newspapers. Examination of the effects of competition in multimedia news markets. Emphasis on issues of ethics, fairness and accuracy in news coverage. Diversity and legal guidelines affecting news presentation are reviewed. (*Spring*)

JOUR 3162. Feature Writing. (3) Prerequisite: JOUR 2160 or permission of the instructor. In depth feature writing for printed newspapers, magazines and newsletters, as well as online publications. Students select feature topics, conduct interviews and gather relevant information to write and edit stories. Students also learn how to market feature articles. *(Fall, Spring)*

JOUR 3163. Visual Communication in Media. (3) Prerequisite: JOUR 2160 or permission of the instructor. Course familiarizes the student with principles, theory and techniques of visual communication and explores the role and dynamics of shaping an "image" through the use of visual communication. Students are exposed to the editing and production aspects of communication visually. *(Fall, Spring)*

JOUR 3401. Journalism Practicum. (2) Provides students with practical experience working with Student Media on campus. (Two semester enrollment limit) *(Fall, Spring)*

LATIN (LATN)

LATN 1201. Elementary Latin I. (4) Beginning survey of elementary Latin grammar through selected readings. *(Fall)*

LATN 1202. Elementary Latin II. (4) Prerequisite: LATN 1201 or equivalent. Completion of the survey of elementary Latin grammar; connected readings in elementary to intermediate Latin prose. *(Spring)*

LATN 2201. Latin Prose. (3) Prerequisite: LATN 1202 or equivalent. Extended selected readings in Latin prose of intermediate difficulty: Caesar, Nepos, or Seneca. *(Offered online on demand)*

LATN 3800. Directed Individual Reading. (1-3) Prerequisite: permission of instructor. Individual work on an author or genre to be arranged with the instructor. *(On demand)*

LIBERAL STUDIES (LBST)

LBST 1101. The Arts and Society: Dance. (3) An introduction to dance in the context of the arts and society. Exploration of the similarities among selected folk and ethnic dance traditions from around the world in terms of functionality; how 20th century American concert dance, social dance, and popular entertainment dance reflect those traditions; socio-political issues evidenced in choreography through lectures, discussion, film video, and live dance performance. (Fall, Spring)

LBST 1102. The Arts and Society: Film. (3) An introduction to the art of film in the context of the arts and society. Analysis of the elements of narrative and documentary film, including works made for television. Examines the role of Hollywood, international, and independent cinema (including television) in reflecting, shaping, and critiquing society. *(Fall, Spring, Summer)*

LBST 1103. The Arts and Society: Music. (3) This course is an introduction to music in the context of the arts and society. Students will survey the position of music in selected cultures from around the world. Emphasis will be placed on music in the United States and Europe. Students will experience a wide range of ideas and styles and move toward thoughtful, critical, and creative listening. Through this course students will gain a deeper understanding of the place of music in reflecting, shaping and critiquing society. *(Fall, Spring, Summer) (Evenings)*

LBST 1104. The Arts and Society: Theater. (3) An introduction to theater in the context of the arts and society. Analysis of the elements that make up theatrical events. The place of theater in reflecting, shaping, and critiquing society. *(Fall, Spring)*

LBST 1105. The Arts and Society: Visual Arts. (3) An introduction to the visual arts in the context of the arts and society. The analysis of visual culture in a variety of media and genres in different historical periods and geographic locations. The function, meaning, and politics of individual works of art and art movements. Also addresses the role of art as a site for the articulation of value systems, including gender, class, and race. (Fall, Spring, Summer)

LBST 2101. Western Cultural and Historical Awareness. (3) All sections of this course explore a major aspect of Western culture. Particular attention is given to an examination of the constructed nature of the present through a close examination of the past and the ways that selected institutions, ideas, or practices change over time and spread in human society, producing both continuity and novelty. *(Fall, Spring, Summer) (Evenings)*

LBST 2102. Global and Intercultural Connections. (3) All sections of this course examine two or more cultures in their own contexts and in the contexts of the global conditions and influences that impact all major world cultures today. Particular attention is given to an analysis of the complex nature of globalization and to a consideration of both its positive and negative impacts. *(Fall, Spring, Summer) (Evenings)*

LBST 2211. Ethical Issues in Personal, Professional, and Public Life. (3) An analysis of the conceptual tools needed to make informed, responsible judgments based on the ability to think critically and knowledgeably about issues of personal, professional, and public ethics and morality. The study of a variety of ethical views and ethical issues. *(Fall, Spring, Summer) (Evenings)*

LBST 2212. Literature and Culture. (3) This course examines the connections between literature and culture. Students are offered the opportunity to examine the roles that literature plays in reflecting, shaping, and challenging cultures. *(Fall, Spring, Summer) (Evenings)*

LBST 2213. Science, Technology, and Society. (3) The role of science and technology in society. The appreciation and understanding of science and the public policy issues related to science and technology. Issues such as science vs. pseudo-science, the ethics of science and technology, the methods of the sciences, the importance of major scientific discoveries, and public expectations of the sciences. *(Fall, Spring)*

LBST 2214. Issues of Health and Quality of Life. (3) A study of individual and social aspects of health. Analysis of individual health and illness behavior and theory; the social, political, and economic contexts of health and illness; and the broad cultural, ethical, and religious understandings of health and illness. *(Fall, Spring)*

LBST 2215. Citizenship. (3) A study of the concept of citizenship as it has evolved in different cultures with an emphasis on scholarly understandings of the rights and responsibilities of citizenship. Includes an examination of the ethical dimensions of citizenship in political, social, and religious contexts. The course includes a service component that allows students to explore the relations of citizenship and public service. During the semester the course meets a total of 27 hours for classroom lectures and discussions and requires completion of 25 hours of voluntary service in the community. *(Fall, Spring)*

LATIN AMERICAN STUDIES (LTAM)

LTAM 1100. Introduction to Latin America. (3) (O) An introductory, interdisciplinary survey of the field of Latin American Studies. Course will focus on the culture, economy, geography, history, politics, and society of Latin America, as well as on the diverse ways in which scholars have studied the region. *(Fall, Spring)*

LTAM 2000. Topics in Latin American Studies (3) Analysis of a selected topic related to Latin American Studies. The particular topic of the course may vary from semester to semester. A student may repeat the course for credit as topics vary. *(On demand)*

LTAM 2116. Contemporary Latin America. (3) Crosslisted as ANTH 2116. Prerequisite: None. A survey of the people and cultures of Mexico, Central America, South America, and the Caribbean. Areas of investigation include religion, race, ethnicity, gender, kinship, social inequality, and economic development. *(Alternate years)*

LTAM 2206. Colonial Latin America. (3) Crosslisted as HIST 2206. A survey of major political, economic, and cultural developments from earliest times to 1826. *(Yearly)*

LTAM 2207. Modern Latin America. (3) Crosslisted as HIST 2207. A survey of Latin American history from 1826 to the present with emphasis on the economy and society. Special attention to twentieth-century revolutions and the role of the United States in Latin America. *(Yearly)*

LTAM 2252. New World Archaeology. (3) Crosslisted as ANTH 2152. Prehistory of North America; Paleoindians, Eastern United States, Southwest, Mexico; archeological methods and theory. *(Spring)*

LTAM 3000. Advanced Topics in Latin American Studies. (3) Analysis of a selected topic related to Latin American Studies. The particular topic of the course may vary from semester to semester. A student may repeat the course for credit as topics vary. *(On demand)*

LTAM 3110. Black Families in the Diaspora. (3) Crosslisted as AFRS 3210 and SOCY 3210. This course is designed to acquaint students with historical and contemporary experiences of peoples of African descent in the Caribbean and Latin American countries with specific emphasis on family structure and family relationships. Includes discussion of theories, history, impact of globalization on family structure, roles of women and identity, socioeconomic status and mobility, slavery, colonialism, and capitalism. The course is designed to provide students with a better understanding of the comparative relationships and links between family structures and common life experiences among peoples of African descent in different parts of the world, with specific emphasis on the Caribbean and Latin American regions. *(On demand)*

LTAM 3129. Cultural Dimension of Doing Business with Spanish-Speaking Countries (3) Crosslisted as SPAN 3029. Prerequisite: ENGL 1102 or 1103. Development of cultural awareness for conducting business with Spanish-speaking countries and U.S. Hispanic communities. Course conducted in English. *(On demand)*

LTAM 3144. Latin American Politics. (3) Crosslisted as POLS 3144. Comparative overview of political and socio-economic change in Latin America from the colonial period to the present. Primary emphasis on Latin American politics in the twentieth century, competing political ideologies, socio-economic issues, international political economy, and internal political change. *(Yearly)*

LTAM 3154. Political Economy of Latin America. (3) Crosslisted as POLS 3155. Intersections of politics and economics in Latin America, focusing on the efforts to foster economic development in the region. Emphasis on post-World War II era. Includes issues such as debt management, dependency theory, impact of free market theories, and the power of labor movements. *(Yearly)*

LTAM 3164. U.S.-Latin American Relations. (3) Crosslisted as POLS 3164. Addresses the always-complicated and often-conflictive relationship between Latin American and the United States. Particular attention to critical contemporary issues such as the drug trade, immigration, international trade, humanitarian aid and U.S. policy toward Cuba. *(Yearly)*

LTAM 3190. The Political Economy of the Caribbean. (3) Crosslisted as AFRS 3190. An examination of the manifestations of Caribbean economic problems and policies and Caribbean political development from the post-war period to the present. *(Fall)*

LTAM 3220. The Caribbean from Slavery to Independence. (3) Crosslisted as AFRS 3220 and HIST 3180. Covering the sweep of history from European/indigenous contact, through the construction of a plantation regime based on African slave labor, and up to the present day, this class explores the spread of colonialism, the dynamics of slavery, and the tumult of abolition and national independence movements. The Caribbean Sea will be examined as a region, emphasizing the ties uniting the islands and the circum-Caribbean coasts. The region's past – including empire and imperial conflict, racial oppression and interaction, and international contact – and its legacies will be discussed in relation to political economics, race, and contemporary culture. *(On demand)*

LTAM 3255. Ancient Latin America. (3) Crosslisted as ANTH 3155. Archeology and ethnohistory of the Aztecs, Maya, Inca, and their predecessors; includes an investigation of prehistoric urbanism, the rise and fall of complex societies, and the application of archaeological methods to complex societies. *(Yearly)*

LTAM 3260. Slavery, Racism and Colonialism in the African Diaspora. (3) Crosslisted as AFRS 3260 and HIST 3190. This course is designed to explore how race and racism, slavery, and colonialism served as principal institutions and constructs shaping the experience between Africa and the emerging African Diaspora in the New World. Students will consider how the maintenance of Western social, economic, and political superiority materialized as functions of these three important historical developments. *(On demand)*

LTAM 3270. Afro-Latin American History. (3) Crosslisted as AFRS 3270 and HIST 3181. This course explores the African Diaspora in Latin America ranging

from the Caribbean Sea to the Rio de la Plata. From slavery, to fighting for freedom in the Spanish-American Wars of Independence, to forging new notions of citizenship in twentieth century Brazil, African-descended peoples have an important place in Latin America's historical past. According special attention to regions with concentrated populations of African-descended peoples, this course reveals the vibrant history of Afro-Latin America. *(On demand)*

LTAM 3274. Resistance and Adaptation: Indian Peoples Under Spanish Rule. (3) Crosslisted as HIST 3174. A historical survey of the interactions of indigenous peoples of the western hemisphere with Spanish colonial authorities from the conquest era to 1825. The course focuses on the indigenous peoples of Mexico, Peru, Chile, and Argentina. *(Alternate years)*

LTAM 3275. Reform, Riots, and Rebellions in Colonial Spanish America, 1692-1825. (3) Crosslisted as HIST 3175. This course examines the economic, political, and cultural origins of violent conflict in colonial Latin America, culminating with an analysis of the revolutions for independence. *(Alternate years)*

LTAM 3276. History of Mexico. (3) Crosslisted as HIST 3176. A survey of Mexican history from pre-Columbian times to the present. Special emphasis will be given to the Spanish conquest, the colonial economy, the independence period, the revolution, and relations with the United States. (*Alternate years*)

LTAM 3277. The Cuban Revolution. (3) Crosslisted as HIST 3177. An examination of the economic and political forces that led to the Cuban revolution. Significant background material from the 19th and early 20th centuries will be presented in addition to an analysis of the revolution and post-revolutionary events. (*Alternate years*)

LTAM 3278. History of Brazil. (3) Crosslisted as AFRS 3278 and HIST 3178. A study of Brazilian history since 1500, with an emphasis on social and economic history. The course emphasizes slavery and race relations, the emergence of export economics, rural protest movements, the effects of urbanization and industrialization, and the rise and fall of the military dictatorship. Meets non-Western requirement. *(Alternate years)*

LTAM 3279. Authoritarianism in Latin America. (3) Crosslisted as HIST 3179. A study of authoritarian rule and resistance thereto in one or more selected Latin American countries, including but not limited to Argentina, Brazil, and Chile. May be repeated for credit as topics vary. (*Alternate years)*

LTAM 3300. Maya Art. (3) Crosslisted as ARTH 3317. Survey of the cultures, artistic production and architecture of the Maya from c. 250 to 800 C. E. Readings and discussions focus on Maya rulership and social structure. *(Spring) (Alternate years)*

LTAM 3301. Mexica (Aztec) Art. (3) Crosslisted as ARTH 3318. Survey of the cultures, artistic production and architecture of the Central Mexico region from c. 1300 to the period of European invasion in the 16th century. Readings and discussions focus on artistic traditions, daily life, and political structures. *(Fall)*

LTAM 3302. Andean Art. (3) Crosslisted as ARTH 3319. Survey of the cultures, artistic production and architecture of the Andean region to the period of European invasion in 1532. Readings and discussions focus on artistic traditions, cosmology, and political structures. *(Spring) (Alternate years*)

LTAM 3309. Masterpieces of Hispanic Literature in English Translation. (3) Crosslisted as SPAN 3009 if course is on Latin America topic. Prerequisites: sophomore standing and ENGL 1102. Advanced studies of Spanish or Spanish-American literature in English translation. May be repeated for credit as topics vary. Course conducted in English.

LTAM 3310. Spanish American Civilization and Culture. (3) Crosslisted as SPAN 3210. Prerequisite: SPAN 2202 or permission of Department. Introduction to the cultural heritage of Spanish America. (*Alternate semesters*)

LTAM 3312. Introduction to Spanish American Literature. (3) Crosslisted as SPAN 3212. Prerequisite: SPAN 2202 or permission of the Department. Introduction to Spanish American literature from the 16th century through the contemporary period. *(Spring)*

LTAM 3313. Pre-Columbian Art. (3) Crosslisted as ARTH 3112. Survey of the arts and architecture of the Americas before European contact in the 16th century. Special emphasis on the interactions of religion, social systems, and the arts as well as identification of ethnic styles of art. Discussions of readings, lectures, slides and video tapes. Essay exams. *(Fall) (Alternate years)*

LTAM 3319. Hispanic Women Writers in English Translation. (3) (W) Crosslisted as SPAN 3019 and WMST 3019. Prerequisites: sophomore standing and ENGL 1102. Examination of prose and poetry by women writers from Spain and the Americas to understand women's voices and other cultures. Conducted in English. Knowledge of Spanish not required. (*On demand)*

LTAM 3360. Studies in Hispanic Film (3). Crosslisted as SPAN 3160 if course is on the Latin American topic. The study of Spanish, Spanish American and/or Hispanic/Latino films. Course conducted in English. May be repeated for credit as topics vary. (*Yearly*)

LTAM 3400. Latin American Studies Internship. (1-3) Prerequisite: permission of the coordinator. Practical experience and/or training related to Latin American studies. A minimum of 45 hours per credit. (*On demand*)

LTAM 3800. Independent Study. (1-3) Supervised investigation of an issue related to Latin American

Studies that is of special interest to the student and that is not covered in existing or available courses. (*On demand*)

LTAM 4116. Culture and Conflict in the Amazon (3). Crosslisted as ANTH 4116. This course examines the development strategies Brazil has used in the Amazon and explores how these policies have affected both the environment and the various populations living in the Amazon. Topics covered include environmental degradation, human rights abuses, culture change, migration, and globalization. (*On demand*).

LTAM 4120. Advanced Business Spanish I. (3) Crosslisted as SPAN 4120. Prerequisites: SPAN 2210, 3201 and an additional 3000- or 4000 level course (3202 recommended), or permission of the Department. Advanced studies in Business Spanish, intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as economics, management, and marketing. *(Fall)*

LTAM 4121. Advanced Business Spanish II. (3) Crosslisted as SPAN 4121. Prerequisites: SPAN 2210, 3201 and an additional 3000- or 4000 level course (3202 recommended), or permission of the Department. Advanced studies in Business Spanish, intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as marketing, finance, and import-export. *(Spring)*

LTAM 4302. Caribbean Literature in English. (3) Crosslisted as AFRS 4102. Prerequisite: junior standing and at least one course in AFRS for AFRS majors. Topics include: loneliness, quest for identity, nationalism, protest, and the use of patois. *(On demand)*

LTAM 4310. Studies in Spanish American Poetry. (3) Crosslisted as SPAN 4210. Prerequisites: two 3000 level courses or permission of the Department. Studies of 19th- and 20th-century Spanish American poetry. (*Alternate years*)

LTAM 4311. Studies in Spanish American Prose Fiction. (3) Crosslisted as SPAN 4211. Prerequisites: two 3000 level courses or permission of the Department. Studies of 19th- and 20th-century Spanish American prose fiction. (*Alternate years*)

LTAM 4312. Studies in Spanish American Theater. (3) Crosslisted as SPAN 4212. Prerequisites: two 3000 level courses or permission of the Department. Studies of 20th-century Spanish American theater. (*On demand*)

LTAM 4314. Studies in Hispanic Children's Literature. (3) Crosslisted as SPAN 4214. Prerequisite: SPAN 3211 or 3212 or permission of the Department. Literary works in Spanish written for children. *(On demand)*

LTAM 4315. Studies in Regional Literature of the Americas. (3) Crosslisted as SPAN 4215. Prerequisite: SPAN 3211 or 3212 or permission of the Department. Studies of Mexican, Central American, Caribbean, Andean, Amazonian, or Southern Cone literature. Readings from representative works. Works from non Spanish speaking areas read in Spanish translation. May be repeated for credit if topics vary. *(On demand)*

LTAM 4316. Social, Political, Cultural, Economic Issues in Hispanic Literature. (3) Crosslisted as SPAN 4216. Prerequisite: SPAN 3211 or 3212 or permission of the Department. Contextual issues surrounding Hispanic literature. *(On demand)*

LTAM 4317. Topics in Hispanic Culture and Civilization. (3) Crosslisted as SPAN 4217. Prerequisite: SPAN 3211 or 3212 or permission of the Department. Various topics involving the fine arts: music, dance, art, film. May be repeated for credit if topic varies. Applicable toward Spanish major or minor only when taught in Spanish. *(On demand)*

LTAM 4318. Cuban Literature. (3) Crosslisted as SPAN 4218. Prerequisite: SPAN 3211 or 3212 or permission of the Department. Cuban literary works in Spanish. *(On demand)*

LTAM 4322. Studies in Advanced Business Spanish. (3) Crosslisted as SPAN 4122. Prerequisite: SPAN 3201 or 3202 or 3203 and SOAN 3220 or permission of the Department. Advanced studies in special topics in Business Spanish (e.g., Tourism in Spain and Latin America, Free Trade in the Americas (NAFTA/TLCAN, Mercosur, The Andean Pact, CAFTA-DR), Socioeconomic Issues in the Greater Caribbean, Business and Technology in Latin America and Spain). *(On demand)*

LTAM 4350. Studies in Latin American Literature. (3) Crosslisted as SPAN 4050. Prerequisites: two 3000 level courses or permission of the Department. Study of a predetermined topic in Latin American literature. May be repeated for credit as topics vary (*On demand)*

LTAM 4600. Seminar in Latin American Studies. (3) (W) Prerequisite: advanced junior or senior class status. A capstone seminar involving in-depth research and analysis of a topic of common interest to Latin American Studies majors, and the elaboration of a senior writing project. (*Spring)*

LTAM 4700. Senior Honors Thesis. (3-6) Prerequisite: senior standing, an overall minimum GPA of 3.25, and permission of the Coordinator of Latin American Studies. The preparation and presentation of an acceptable honors thesis. (*On demand)*

MATHEMATICS EDUCATION (MAED)

MAED courses offered by the Department of Mathematics and Statistics are intended primarily for students seeking teacher licensure, licensure renewal, or license upgrading. These courses may not be used to satisfy the requirements for a major or minor in Mathematics. They may be accepted as non-math electives for B.A. and B.S. degrees in Mathematics and for the M.A. in mathematics education.

MAED 3000. Topics in Mathematics Education, Elementary. (1-6) Prerequisite: Permission of the department. Special topics in mathematics education for grades K-6. May be repeated for credit as topics vary. *(On demand)*

MAED 3040. Topics in Mathematics Education, Middle Grades. (1-6) Prerequisite: Permission of the department. Special topics in mathematics education for middle grades. May be repeated for credit as topics vary. *(On demand)*

MAED 3070. Topics in Mathematics Education, Secondary. (1-6) Prerequisite: Permission of the department. Special topics in mathematics education at the secondary level. May be repeated for credit as topics vary. *(On demand)*

MAED 3103. Using Technology to Teach Secondary School Mathematics. (3) Prerequisite: permission of the department. Technology as a tool for exploring mathematical ideas and representing mathematical concepts, including lab assignments related to using technology throughout the secondary school mathematics curriculum. *(Spring)*

MAED 3105. Geometry in the Secondary School Mathematics Curriculum. (3) Prerequisite: Permission of the department. Study of geometry from synthetic, transformational, and algebraic perspectives including activities and software to enhance the conjecture/theorem/proof process. *(Fall)*

MAED 3222. Teaching Mathematics to Elementary School Learners, Grades K-2. (3) Prerequisites: Students must be accepted as Elementary Education majors in the College of Education. This course is designed to help students develop knowledge and understanding of school mathematics and methods for teaching mathematics to children in grades K through 2. The course focuses on the importance of learning through manipulative and concrete experiences, on and planning lessons in which students develop their ideas through action and discussion.

MAED 3224. Teaching Mathematics to Elementary School Learners, Grades 3-6. (3) Prerequisites: MAED 3222. This course is designed to help students develop knowledge and understanding of school mathematics and methods for teaching mathematics to children in Grades 3 through 6. The course includes a focus on planning and developing mathematics lessons and also includes the study of a variety of techniques for assessing student learning.

MAED 3232. Teaching Mathematics to Middle School Learners. (3) Prerequisites: Admission to Teacher Education and Senior Standing. Corequisite: EDUC 4290. Preparation to teach mathematics at the middle school level with emphasis on problem solving, mathematical connections, manipulatives, cultural diversity, and assessment, including school-based field experiences.

MAED 3252. Teaching Mathematics to Secondary School Learners. (3) Prerequisite: Admission to Teacher Education or permission of the department. Secondary school mathematics and its relation to the curriculum K-12. Teaching strategies and activities in secondary school mathematics with emphasis on problem solving, mathematical connections, communication, discourse, and assessment, including school-based field experiences. *(Fall) (Evenings)*

MATHEMATICS (MATH)

All MATH/STAT/OPRS courses offered by the Department of Mathematics and Statistics are approved to satisfy requirements for the Problem Solving Goal of UNC Charlotte Education.

MATH 0900. Math Study Skills and Algebra Review. (1) This course prepares the student to be successful in college algebra or precalculus. Topics include a review of elementary algebra, exponents and radicals, polynomial and rational functions, equations and inequalities. Study skills needed to be successful in mathematics are an important part of this course. Placement into this course is based on the score on the Mathematics Placement Exam which is administered by the Mathematics Department and is restricted to students who do not have college-level math credit.

MATH 1100. College Algebra and Probability. (3) Prerequisite: appropriate score on the Mathematics Placement Test or placement by the Department. The basic mathematics course for undergraduates not majoring in Mathematics, Engineering, or the Physical Sciences. Fundamental concepts of algebra. Students who already have credit for MATH 1103, 1120, 1121, or 1241 with a grade of *C* or better may not take 1100 for credit. *(Fall, Spring, Summer) (Evenings)*

MATH 1102. Introduction to Mathematical Thinking. (3) Prerequisite: appropriate score on the Mathematics Placement Test or placement by the Department. An introduction to mathematical ideas designed primarily for non-science students. Topics are drawn from various branches of mathematics which may include algebra, geometry, number theory, probability, statistics and graph theory. Computers may be used. *(Fall, Spring)*

MATH 1103. Precalculus Mathematics for Science and Engineering. (3) Prerequisite: appropriate score on the Mathematics Placement Test or placement by the Department. Intended for students who plan to take MATH 1241. Functions and graphs, linear and quadratic functions, polynomial and rational functions, exponential and logarithmic functions, trigonometric identities. Students who already have credit for MATH 1120, 1121, or 1241 with a grade of *C* or better may not take MATH 1103 for credit. *(Fall, Spring, Summer) (Evenings)*

MATH 1105. Finite Mathematics. (3) Prerequisite: appropriate score on the Mathematics Placement Test or placement by the Department. Review of high school

algebra, elementary matrix algebra, systems of linear equations and inequalities, elementary linear programming; probability. *(Fall, Spring)*

MATH 1120. Calculus. (3) Prerequisite: appropriate score on the Mathematics Placement Test, MATH 1100 or 1103, or placement by the Department. Intended for students majoring in fields other than engineering, mathematics or science. Elements of differential and integral calculus for polynomial, rational, exponential, logarithmic functions, with applications to business and the social and life sciences. (May not be taken for credit if credit has been received for MATH 1121 or 1241.) *(Fall, Spring, Summer) (Evenings)*

MATH 1121. Calculus (ET). (3) Prerequisite: appropriate score on the Mathematics Placement Test; MATH 1100 or 1103; or placement by the Department. Intended for students majoring in Engineering Technology. Elements of differential and integral calculus for polynomial, rational, exponential, logarithmic and trigonometric functions, with applications to engineering. May not be taken for credit if credit has been received for MATH 1120 or 1241. *(Fall, Spring) (Evenings)*

MATH 1165. Introduction to Discrete Structures. (3) Prerequisite: ITCS 1214. Propositions and truth tables, sets, permutations and combinations, relations and functions, lattices, and trees. *(Fall, Spring) (Evenings)*

MATH 1241. Calculus I. (3) Prerequisite: appropriate score on the Mathematics Placement Test; MATH 1103 with a grade of *C* or better, or placement by the Department. Designed for students majoring in Mathematics, Science, or Engineering. Elementary functions, derivatives and their applications, introduction to definite integrals. *(Fall, Spring, Summer) (Evenings)*

MATH 1242. Calculus II. (3) Prerequisite: MATH 1241 with a grade of *C* or better. Methods for evaluating definite integrals, applications of integration, improper integrals, infinite series, Taylor series, power series, and introduction to differential equations. *(Fall, Spring, Summer) (Evenings)*

MATH 2050. Topics in Mathematics. (2-3) Prerequisite: permission of the department. Topics in mathematics elected to supplement regular offerings at the 2000 level. (May or may not count for a Math core course for the ITCS major.) May be repeated for additional credit with the approval of the Department. *(On demand)*

MATH 2120. Intermediate Applied Calculus. (3) Prerequisite: MATH 1120 or MATH 1241. Introduction to the calculus of functions of several variables, trigonometric functions, techniques of integration of functions of one variable, differential equations, and Taylor polynomials and infinite series. (May not be taken for credit if credit has been received for MATH 1242.) *(Fall, Spring, Summer) (Evenings)*

MATH 2164. Matrices and Linear Algebra. (3) Prerequisite: MATH 1120 or 1241 with a grade of *C* or better or permission of the department. Matrix algebra, systems of linear equations, vector spaces, linear transformations, determinants, inner products, eigenvalues. *(Fall, Spring, Summer) (Evenings)*

MATH 2171. Differential Equations. (3) Prerequisite: MATH 1242 with a grade of *C* or better. An introduction to ordinary differential equations including first order equations, general theory of linear equations, series solutions, special solutions, special equations such as Bessel's equation, and applications to physical and geometric problems. *(Fall, Spring, Summer) (Evenings)*

MATH 2241. Calculus III. (3) Prerequisite: MATH 1242 with a grade of *C* or better. Functions of two or more variables, vectors in two and three dimensions, partial derivatives, optimization, double and triple integrals and their applications. *(Fall, Spring, Summer) (Evenings)*

MATH 2242. Calculus IV. (3) Prerequisite: MATH 2241 with a grade of *C* or better. Parametric curves and surfaces, vector fields, line and surface integrals; Green's theorem, Divergence theorem, Stoke's theorem and applications. Fourier series and its applications. *(Fall, Spring) (Evenings)*

MATH 2340. Number Concepts and Relationships. (3) Prerequisite: MATH 1100 or MATH 1103 with a grade of *C* or better or permission of the department. A study of integers, rationals, and real numbers; conjectures and intuitive proofs in a number theory; number sequences, patterns, functions; algebraic concepts and skills. An emphasis on the development of problem-solving strategies and abilities. (May not be taken for the major or minor). *(Spring)*

MATH 2341. Algebra and Algebraic Structures. (3) Prerequisites: MATH 2340 with a grade of *C* or better or MATH 2102 with a grade of *C* or better or permission of the department. A study of functions and their properties arising from a variety of problem situations. Representations of real-world relationships with physical models, charts, graphs, equations, and inequalities. Properties of real and complex numbers. Concrete examples of algebraic structures such as groups, rings, fields, and vector spaces. *(Fall)*

MATH 2342. Data Analysis and Probability. (3) Prerequisite: STAT 1220 or STAT 1222 with a grade of *C* or better or permission of the department. Introduction to the statistical process. Collection of data from experiments and surveys; organizing, representing, and interpreting data; formulating arguments based on analysis. Plan and conduct experiments and simulations to determine experimental probabilities. Develop counting techniques and other methods to determine probabilities. (May not be taken for the major or minor). *(Spring)*

MATH 2343. Geometry and Measurement. (3) Prerequisite: MATH 1100 or MATH 1103 with a grade of *C* or better or permission of the department. A study of properties and relationships of shape, size, and symmetry in two and three dimensions. Explore

concepts of motion in two and three dimensions through transformations. Present written and oral arguments to justify conjectures and generalizations. Become familiar with the historical development of Euclidean geometry. (May not be taken for the major or minor). *(Fall)*

MATH 2428. Mathematical Theory of Interest. (3) Prerequisite: MATH 2120 or MATH 1242. The measurement of interest, solution of problems in interest, basic annuities, more general annuities, yield rates, amortization schedules and sinking funds, bonds and other securities. *(Fall, Spring, Summer) (Evenings)*

MATH 3050. Selected Topics in Mathematics. (2-3) Prerequisite: Permission of the department. Topics selected to supplement regular offerings at the 3000 level in mathematics or statistics. May be repeated for credit with the approval of the Department. *(On demand)*

MATH 3116. Graph Theory. (3) Prerequisite: MATH 2164 or permission of the department. Graphs as mathematical models. Planarity, colorability, connectivity, trees. Applications and algorithms for networks, matching problems and areas of computer science. *(Fall) (Alternate years)*

MATH 3122. Probability and Statistics I. (3) Prerequisite: MATH 2241 with a grade of *C* or better. Sample spaces, random variables, moment generating functions, some standard distributions, multivariate distributions, laws of large numbers, limit theorems. *(Fall) (Evenings)*

MATH 3123. Probability and Statistics II. (3) Prerequisite: MATH/STAT 3122. Estimation, bias, consistency, efficiency, maximum likelihood estimates, sufficient statistics, testing, the power function, chi-square test, Kolmogorov-Smirnov test. Credit for mathematics major not given for both MATH 3125 and MATH/STAT 3123. *(Spring) (Evenings)*

MATH 3128. Actuarial Science I. (3) Prerequisites: MATH 3122 or the permission of the department. The mathematical theory of compound interest. The theory and application of contingency mathematics in the life and casualty areas. Probabilistic and deterministic models for annuities and pensions. *(Fall)*

MATH 3129. Actuarial Science II. (3) Prerequisites: MATH 3128 or the permission of the department. Deterministic and probabilistic models for annuities and pensions, additional models of risks and financial transactions. *(Spring)*

MATH 3141. Advanced Calculus of One Variable. (3) Prerequisites: MATH 2241 and 2164 with grades of *C* or better. Topology of the real line; continuity, uniform continuity, differentiability, integration, sequences and series of functions. *(Fall) (Evenings)*

MATH 3142. Advanced Calculus of Several Variables. (3) Prerequisite: MATH 3141. Continuity and differentiability of functions of several variables, inverse and implicit function theorems, integration, Fubini's theorem, change of variables, the classical integral theorems of Gauss, Green and Stokes and their generalizations. *(Spring) (Evenings)*

MATH 3146. Introduction to Complex Analysis. (3) Prerequisite: MATH 2241 with a grade of *C* or better. Analytic functions, complex integration, calculus of residues, conformal mapping. *(Spring) (Alternate years)*

MATH 3163. Introduction to Modern Algebra. (3) (W) Prerequisite: MATH 1242 and MATH 2164 with a grade of *C* or better or permission of the department. Examples and elementary properties of basic algebraic structures, especially groups. The course emphasizes the writing of proofs of elementary theorems. *(Fall, Spring) (Evenings)*

MATH 3166. Combinatorics. (3) Prerequisites: MATH 2164. Combinatorial modeling, generating functions, recurrence relations, inclusion-exclusion principle and problems from recreational mathematics. *(Spring) (Alternate years)*

MATH 3171. Applied Mathematics. (3) Prerequisites: MATH 2241 and 2171 with grades of *C* or better. Separation of variables techniques for the classical partial differential equations of mathematical physics; Fourier series; Sturm-Liouville theory. *(Fall) (Evenings)*

MATH 3176. Numerical Analysis. (3) Prerequisites: ITCS 1214, MATH 2241 and 2171. Numerical solution of initial value and boundary value problems in ordinary differential equations, direct and iterative methods of solving systems of equations. Selected problems will be programmed for computer solution. *(Spring) (Alternate years)*

MATH 3181. Fundamental Concepts of Geometry. (3) Prerequisite: MATH 2164 with a grade of *C* or better. Foundations of geometry, transformations, comparison of Euclidean and non- Euclidean geometries. *(Fall, Spring) (Evenings)*

MATH 3551. Mathematics Cooperative Education and 49ership Experience. (0) Prerequisites: Sophomore standing, a 3.0 GPA in MATH/STAT/OPRS courses and permission of the department of Mathematics. Acceptance into the Experiential Learning Program by the University Career Center is required. The student will be employed in a manner that affords him/her the opportunity of using and enhancing mathematical knowledge and skills through practical experience of co-op rotation or 49ership experience. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. After completing MATH 3551, the co-op student must take MATH 3652. MATH 3551 may be repeated with permission of the department. Evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For

more information, contact the University Career Center. *(On demand)*

MATH 3652. Mathematics Cooperative Education Seminar. (1) Prerequisite: MATH 3551. The student will give an exposition of his/her work experience in MATH 3551. An exposition of underlying theoretical concepts and related ideas may also be required. *(On demand)*

MATH 3688. Mathematics Awareness Seminar. (0) Prerequisite: sophomore standing. Visiting speakers, discussion of internships, cooperative education and job opportunities; selected topics in mathematics. *(Fall)*

MATH 3689. Mathematics Project Seminar. (1) (O) Prerequisite: senior standing. Oral presentation by the student on an area of mathematics or a mathematical problem. *(Fall, Spring)*

MATH 3691. Seminar. (1-6) Prerequisite: Permission of the department. Readings, study and discussion designed to develop the student's ability to study independently and to present results properly. *(On demand)*

MATH 3790. Junior Honors Seminar. (3) Prerequisite: permission of the department. May be repeated once for additional credit with approval of the Department. *(On demand)*

MATH 3791. Senior Honors Tutorial. (3) Prerequisite: Permission of the department. Individual tutorials in which the student will pursue independent study and research in any area of mathematics under the direction of one or more faculty members. The project of the student will be planned to culminate in a research paper of original or expository nature. May be repeated for additional credit with the approval of the Department. *(On demand)*

MATH 4000. Topics in Foundations or History of Mathematics. (2-3) Prerequisite: Permission of the department. Topics in the foundations or the history of mathematics selected to supplement regular course offerings in this area of mathematics. May be repeated for credit with approval of the Department. Credit for the M.A. degree in Mathematics requires approval of the Department. *(On demand)*

MATH 4040. Topics in Analysis. (2-3) Prerequisite: permission of the department. Topics in analysis selected to supplement regular course offerings in this area of mathematics. May be repeated for credit with the approval of the Department. Credit for the M.A. degree in Mathematics requires approval of the Department. *(On demand)*

MATH 4051. Computer Exploration and Generation of Data. (3) (O) Prerequisite: MATH 2120 or 2241 and Stat 2122 or 2223. This is a project course. The grade will be based on from four to five projects that will utilize spreadsheet technology. It includes an introduction to a major spreadsheet, such as Excel. Assigned projects may be selected from a range of topics that include: Data Analysis and Exploration; Dynamical Models and Difference Equations (Epidemics, Harvesting Models, Population Dynamics, Predator-Prey Models); Physical Models (projectile motion, including air resistance, orbits of celestial bodies, heat propagation); Combinatorics and Probability (birthday problem, genetics, simulation of distributions); Optimization (inventory control, apportionment algorithms); Financial Mathematics (Stock Price Simulation, Pricing of Derivatives); Business Simulations (Net Present Value Comparisons and Risk Evaluation, Sensitivity Analyses). Completed projects must include written descriptions, explanation, and evaluation along with appropriate working spreadsheets that accomplish the assigned objectives. *(Fall, Spring) (Evening)*

MATH 4060. Topics in Algebra. (2-3) Prerequisite: Permission of the department. Topics in algebra selected to supplement regular course offerings in this area of mathematics. May be repeated for credit with the approval of the Department. Credit for the M.A. degree in Mathematics requires approval of the Department. *(On demand)*

MATH 4080. Topics in Geometry and Topology. (3) Prerequisite: Permission of the department. Topics in geometry or topology selected to supplement regular course offerings in this area of mathematics. May be repeated for credit with approval of the Department. Credit for M.A. degree in Mathematics requires approval of the Department. *(On demand)*

MATH 4109. History of Mathematical Thought. (3) Prerequisite: MATH 1241 or permission of the department. A study of the development of mathematics in its historical setting from the earliest beginnings to modern times. Not approved for the M.A. in mathematics degree. *(Fall) (Evenings)*

MATH 4122. Probability and Stochastic Models. (3) Prerequisite: STAT 2223 or MATH/STAT 3122. Topics include a brief review of probability, normal random variables, the Central Limit Theorem, and applications to Statistics; Poisson process, the exponential distribution, and applications in actuarial science; the binomial branch model of option pricing. *(Spring) (Alternate years)*

MATH 4128. Risk Theory. (3) Prerequisite: MATH 2120 or MATH 1242, STAT 2223 or MATH/STAT3122, and STAT 3110. Topics include an introduction to risk theory and the concept of VAR (Value-at-Risk), building blocks consisting of measuring financial risk, computing VAR, backtesting, portfolio risk, forecasting risks and correlation, and a study of VAR Systems including VAR Methods, stress testing, delta-normal VAR, simulations, credit and liquidity risk. *(Spring)(Alternate years)*

MATH 4161. Number Theory. (3) Prerequisite: MATH 3163 with a grade of *C* or better or permission of the department. A study of the elements of classical number theory including divisibility, congruences, diophantine equations, prime numbers and their distribution, quadratic reciprocity, number-theoretic functions, and

famous unsolved problems. Not approved for the M.A. in mathematics degree. *(Spring) (Alternate years)*

MATH 4163. Modern Algebra. (3) Prerequisite: MATH 3163 or permission of the department. Groups, rings, integral domains, and fields. *(Fall) (Alternate years)*

MATH 4164. Abstract Linear Algebra. (3) Prerequisite: MATH 2164 and 3163 or permission of the department. Vector spaces over arbitrary fields, linear transformations, canonical forms, and multilinear algebra. *(Spring) (Alternate years)*

MATH 4181. Introduction to Topology. (3) Prerequisite: MATH 2164 with a grade of *C* or better. Topics from set theory and point set topology such as cardinality, order, topological spaces, metric spaces, separation axioms, compactness and connectedness. *(Fall) (Alternate years)*

MATH 4691. Seminar. (1-6) Prerequisite: Permission of the department. Individual or group investigation and exposition of selected topics in mathematics. *(On demand)*.

MATH 4692. Seminar. (1-6) Prerequisite: Permission of the department. A continuation of MATH 4691. *(On demand)*

MIDDLE GRADES EDUCATION (MDLG)

MDLG 3130. The Early Adolescent Learner. (4) Prerequisite: Admission to Teacher Education. Physical, sexual, social, cognitive, and emotional development in the 10-15 year old with emphasis on how these developmental diversities affect the middle grades classroom. Includes 40 hours of field experiences. *(Fall)*

MDLG 3131. The Philosophy and Curriculum of Middle Grades Education. (4) Prerequisites: MDLG 3130, admission to Teacher Education. Overview of education in the middle grades (6-9) with emphasis on the foundational components, organizational patterns, instructional programs, and integrated curriculum unique to the middle school. Includes 40 hours field experiences. *(Spring)*

MDLG 3800. Individual Study in Middle Grades Education. (1-6) Prerequisite: Permission of the student's advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. *(Fall, Spring, Summer)*

Note: Students are required to complete a year-long internship beginning the semester prior to student teaching and ending upon the successful completion of student teaching.

MDLG 4430. Student Teaching/Seminar: 6-9 Middle Grades Education. (15) (O) Prerequisite: Completion of all coursework and approval of an Application for Student Teaching. Planned sequence of experiences in the student's two areas of content specialization conducted in an approved middle school setting under the supervision and coordination of a University supervisor and a cooperating teacher. The student must demonstrate the competencies identified for his/her specific teaching fields in appropriate grade-level settings. Approximately 35 to 40 hours per week in an assigned school setting, teaching in two areas of concentration and 10-12 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

MLDG 4471. Middle Grades Clinical Experience. (3) Program of learning activities in the student's level and/or area of academic concentration in an approved school setting (gr. 6-9). *(On demand)*

MIDDLE, SECONDARY, AND K-12 EDUCATION (MDSK)

MDSK 2100. Diversity and Inclusion in Middle/Secondary Schools (3). Introduction to the contexts, challenges, and changes in U.S. middle grades and secondary education; emphasis on diversity in student populations including special needs students; examination of diversity in schools, including school organizations, approaches to teaching, purposes and expectations for public education, and communities. 10 hours of observations and participation in school settings required.

MDSK 3150. Research and Analysis of Teaching Middle and Secondary School Learners. (3) Should be taken in the semester prior to student teaching. Concepts, methods, and practices used by effective teachers in their daily classroom routines, including systematic observation skills, interpretation of observation data, and application of research-based findings. Includes 20 hours of field experiences. *(Fall, Spring)*

MDSK 3151. Instructional Design and the Use of Technology with Middle and Secondary School Learners. (3) Prerequisite: EDUC 2100, SECD 3140 or MDLG 3130, SPED 2100, and admission to Teacher Education. Setting goals and objectives for instruction; planning activities and writing assessments based on objectives; use of computer software for the creation of units, lesson plans, and teacher-made tests. *(Fall, Spring)*

MDSK 3160. Learning and Development: Birth through Adolescence. (3) Prerequisites: EDUC 2100, SPED 2100, and admission to Teacher Education. Theories of learning and development and a systematic examination of childhood and adolescence, with particular attention to biological, social, and cognitive areas of child development. Includes 10 hours of field experiences. *(Fall)*

MDSK 3161. K-12 Curriculum Studies. (3) Prerequisites: EDUC 2100, SPED 2100, and admission to Teacher Education. Curriculum planning and development skills with emphasis on relating school

content and skills to societal and individual needs, designing and implementing integrated activities, and examining the nature and functions of schools. *(Spring)*

MDSK 4251. Teaching Science to Middle and Secondary School Learners. (3) Should be taken semester prior to student teaching. Preparation to teach science at the middle and secondary school levels with emphasis on a holistic, interdisciplinary understanding of science; science as related to everyday life and society; and interdisciplinary aspects of science. Includes 15 hours of field experiences. *(Fall, Spring)*

MDSK 4253. Teaching Social Studies to Middle and Secondary School Learners. (3) Should be taken semester prior to student teaching. A methods course for teaching social studies at the middle and secondary school levels. Emphasis on using social science content to develop effective teaching strategies, instructional plans, and classroom materials for teaching social studies to middle and secondary school students. Includes 15 hours of field experiences. *(Fall, Spring)*

MDSK 4469. Student Teaching/Seminar: K-12 Foreign Language. (15) Prerequisite: Approval of an Application for Student Teaching. A planned sequence of experiences in the student's area of language specialization (French, German, or Spanish) conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher. Students must demonstrate the competencies identified for their language field in two different grade level settings, initially at the elementary level and subsequently at either the middle or secondary school level. Approximately 35-40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

MECHANICAL ENGINEERING (MEGR)

MEGR 2141. Engineering Mechanics I. (3) Prerequisites: PHYS 2101 and MATH 1242 with a grade of C or better. This course introduces the principles of particle and rigid body mechanics with engineering applications. Force systems and resultants. The equilibrium of particles and rigid bodies. Friction. Properties of areas and volumes.

MEGR 2144. Introduction to Solid Mechanics. (3) Prerequisites: MEGR 2141 with a grade of *C* or better and MATH 2241. Engineering theory of deformable solids and applications. Stress and deformation resulting from axial, torsion and bending loads. Shear and moment diagrams, Mohr's circle for stress and strain and buckling of columns.

MEGR 2156. Design Projects Laboratory I. (2) Prerequisites: ENGR1201, ENGR1202, PHYS 2102, MEGR 2141 with a grade of *C* or better, and MATH 2241. Corequisite: MEGR 2180 Manufacturing Systems. Introduction to design as well as the fundamentals of manufacturing, including computer-aided manufacturing (CAM). Emphasis will be placed on design visualization, functional analysis, and design prototyping. Student designs will be manufactured to verify design concepts.

MEGR 2180. Manufacturing Systems. (3) Prerequisites: ENGR 1202, PHYS 2102L, MEGR 2141 with a grade of *C* or better, and MATH 2241. Corequisite: MEGR 2156, Design Projects Laboratory I. The course will impart a broad overview of manufacturing materials, processes, and procedures. Topics include mechanical behavior and physical properties, basic materials, casting, rolling, forming, welding, cutting, surfaces, engineering metrology, quality assurance, and automation. Basic concepts of engineering economics and cost estimating. The economics of manufacturing will also be introduced, including the time value of money, economic analysis, and cost estimating.

MEGR 2299. Motorsports Engineering Clinic I. (1) Prerequisite: admission to Motorsports concentration; sophomore standing. An examination of various aspects of automotive and motorsports engineering presented by faculty and industry representatives. Participation as a Motorsports Trainee (MT) is required. MT's are assigned to automotive projects on campus and/or with industrial partners.

MEGR 2240. Computational Methods for Engineers. (3) Prerequisites: MEGR 2141 with a grade of C or better and MATH 2241. Automated engineering analysis and synthesis techniques based on software engineering principles. Overview of data representation and computing languages. Program development using programming languages and off-the shelf software packages. Study of numerical methods, potential errors, and computational stability. emphasis on effective design, testing, and debugging practices.

MEGR 3090. Special Topics in Mechanical Engineering. (1-4) Prerequisite: permission of the department. The course will build upon and synthesize the knowledge the students have gained from the mechanical engineering core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization. May be repeated for credit. (*Technical Elective*)

MEGR 3111. Thermodynamics I. (3) Prerequisite: MATH 2171 with a grade of C or better. Corequisite: MEGR 3121. First and second laws of thermodynamics. Work and heat carnot cycle. Ideal and real gases. Non-reactive mixture of gases. Availability and irreversibility.

MEGR 3112. Thermodynamics II. (3) Prerequisite: MEGR 3111, with a grade of *C* or better. General thermodynamic relations; equations of state and generalized charts. Combustion, dissociation, and chemical equilibrium. Introduction to power cycles.

MEGR 3114. Fluid Mechanics. (3) Prerequisite: MEGR 3121 with a grade of *C* or better. Basic concepts of a

fluid and the fundamentals of ideal and real fluid flow. Topics include fluid statics, conservation principles, Bernoulli's equation, fluid flow in pipes, and measurement devices.

MEGR 3116. Introduction to Heat Transfer. (3) Prerequisites: MATH 2171 and MEGR 3111, both with a grade of *C* or better. One and two dimensional steady state conduction. Finite difference methods. Radiative heat transfer, emissivity, black body radiation. Heat exchange among two and multi-body systems. Introduction to concepts and applications of convective heat transfer.

MEGR 3121. Dynamics Systems I. (3) Prerequisites: MEGR 2141 and MATH 1242, both with a grade of *C* or better. The kinematics and kinetics of rigid bodies. Work-energy and impulse-momentum principles and conservation laws. Introduction to the kinematics of mechanisms.

MEGR 3122. Dynamic Systems II. (3) Prerequisites: MEGR 2240, MEGR 3121 and MATH 2171, all with a grade of *C* or better. Modeling of mechanical dynamic systems. Vibration of lumped mass systems. Analysis and design of mechanical systems using time domain and frequency domain methods.

MEGR 3131. Introduction to Electronic Materials. (3) Prerequisite: PHYS 2102, with a grade of *C* or better. Electronic materials and devices with examples from crystalline and amorphous semiconductors, junction and MOS devices, thermoelectrics, lasers and superconductors. Introduction to the quantum mechanics of electrons in solids, electron-atom interactions and energy band model, providing a basis for rationalizing a wide variety of electronic properties. (*Technical Elective*)

MEGR 3152. Mechanics and Materials Laboratory. (2) (W) Prerequisites: MEGR 2144, MEGR 3161 and MEGR 3171L, all with a grade of *C* or better. Corequisite: MEGR 3122. Laboratory experiments related to the areas of mechanics and materials engineering. Three hours of laboratory work per week.

MEGR 3156. Design Projects Lab II. (2) Prerequisites: ECGR 2161, MEGR 2144, and MEGR 2156 all with a grade of C or better. Study of the process of design and reduction to practice of engineering concepts in a team environment. Requirements definition, concept synthesis, concept of evaluation, project planning and execution.

MEGR 3161. Introduction to Engineering Materials. (3) Prerequisites: CHEM 1251, MATH 2171, and MEGR 2144 with a grade of C or better. Classifications of engineering materials. Introduction to property structure relationships. Ideal and defect atomic structures of solids with examples from metals, ceramics and polymers. Cold working and annealing effects. Phase equilibria in alloys; introduction to diffusional processes and transformation kinetics.

MEGR 3162. Mechanical Behavior and Strengthening of Solids. (3) Prerequisite: MEGR 3161, with a grade of *C* or better. Mechanical properties of materials including elastic behavior, plastic flow, fracture, creep, fatigue, and elevated temperature effects. Correlation of properties with atomic and microscopic structure. Dislocation theory and its application to mechanical behavior and strengthening mechanisms. Alloy hardening effects; effects of processing and heat treatments. Applications in Fe-C alloys. *(Technical Elective)*

MEGR 3171. Introduction to Measurements and Instrumentation. (2) Prerequisite: ECGR 2161, with a grade of *C* or better. Corequisite: MEGR 3171L. Statistical analysis of experimental data, curve fitting. Operational amplifiers and signal conditioning techniques for remote monitoring. Computer data acquisition, interfaces and techniques, RS-232 and GPIB interface buses. Discussion of the principles involved in the use of sensors and transducers in measurements of linear and angular displacement, velocity and acceleration, temperature, force, pressure, torque and flow. Introduction to dynamic measurements and frequency analysis.

MEGR 3171L. Instrumentation Laboratory. (2) (W) Prerequisite: PHYS 2102L with a grade of *C* or better. Corequisite: MEGR 3171. Utilization of measuring equipment targeted to mechanical engineering applications. Experiments will focus on the use of instrumentation and computer interfacing methods for the optimization of measurement processes. Basic programming of scientific instruments.

MEGR 3210. Automotive Power Plants. (3) Prerequisite: MEGR 3112, with a grade of *C* or better. Energy analysis of internal and external combustion engines for vehicular propulsion. Thermodynamic principles for combustion efficient use of fuel combustion, different types of fuel use, and pollutant control. *(Technical Elective)*

MEGR 3211. Road Vehicle Dynamics. (3) Prerequisites: MEGR 3121 and MEGR 3122, both with a *C* or better. An introduction to road vehicle Dynamics. Acceleration and braking performance, road loads, steady-state cornering, suspension, steering system and tire behavior. *(Technical Elective).*

MEGR 3212. Heat Convection and Compact Heat Exchanger Design. (3) Prerequisites: MEGR 3114 and MEGR 3116, both with a grade of *C* or better. Natural, forced internal and external heat convection, heat convection in phase change (boiling and condensation) and design of compact heat exchangers *(Technical Elective)*

MEGR 3214. Refrigeration and Air/Conditioning. (3) Prerequisites: MEGR 3112 and 3116, both with a grade of *C* or better. Thermodynamics and heat transfer applied to analysis, design of cooling/heating systems. *(Technical Elective)*

MEGR 3216. Thermal/Fluid Design. (3) Prerequisites: MEGR 3114 and 3116, both with a grade of *C* or better. Design of systems utilizing thermodynamic, heat transfer, and fluid flow principles. Topics include thermal system design, thermodynamic modeling, design applications with heat transfer, thermo-economic optimization of simple and complex systems.

MEGR 3221. Machine Analysis and Design I. (3) Prerequisite: MEGR 3122 and MEGR 2144, both with a grade of *C* or better. Technical application of basic principles of mechanical science to analysis of machines and mechanical systems. Design of typical machine elements. Strength and deflection requirements.

MEGR 3222. Machine Analysis and Design II. (3) Prerequisite: MEGR 3221, with a grade of *C* or better. Synthesis of machines and mechanical systems. Analysis, creative design and selection of machines and machine elements. *(Technical Elective)*

MEGR 3225. Introduction to Finite Element Analysis. (3) Prerequisites: MEGR 2144 and MEGR 3122, both with a grade of *C* or better. The basis concepts of finite element analysis (FEA) are introduced. The necessary concepts from linear algebra are reviewed. Simple elements such as truss and beam elements are emphasized, with an introduction to continuum elements for structural analysis. Introduction to heat transfer elements for steady state conduction and convection. Mathematics software is used to illustrate such concepts as the finite element assembly process, and the solution of the primary unknowns. A commercially available finite element code is also introduced. *(Technical Elective)*

MEGR 3251. Thermal/Fluids Laboratory. (2) (W) Prerequisites: MEGR 3111, MEGR 3114, and MEGR 3171L, all with a grade of *C* or better. Laboratory experiments related to the areas of thermodynamics, fluid mechanics, and heat transfer. Three hours of laboratory work per week.

MEGR 3255. Senior Design I. (2) Prerequisite: MEGR 3156 and MEGR 3152 with a grade of *C* or better. Corequisite: MEGR 3251 and senior standing in mechanical engineering. First of a two-semester sequence leading to a major integrative experience in applying the principles of design and project management to the design of a major mechanical engineering system. Teamwork and communication skills are emphasized.

MEGR 3256. Senior Design II. (2) (O) Prerequisite: MEGR 3255 with a grade of *C* or better. A continuation of MEGR 3255 including project execution leading to an oral presentation and final written report.

MEGR 3281. Numerical Control of Manufacturing Processes. (3) Prerequisite: MEGR 2180. Fundamental theory and application of numerically controlled machine tools including design principles, elements of machine structure, control systems programming methods. Role of numerical control in flexible manufacturing systems. Two lectures and a two hour lab per week. (*Technical Elective*)

MEGR 3282. Statistical Process Control and Metrology. (3) Prerequisite: MEGR 3171. Introduction to metrology. Measurement of size, form and surface texture. Introduction to quality control, control charts for attributes and variables, acceptance sampling. Process capability estimation and process control. *(Technical Elective)*

MEGR 3299. Professional Development. (1) An examination of various aspects of engineering as a profession. The course will be graded on a Pass/No Credit basis.

MEGR 3355. Motorsports Engineering Clinic II. (2) Prerequisite: admission to Motorsports concentration, senior standing in mechanical engineering, MEGR 2299 and MEGR 3156, and MEGR 3152 all with a grade of *C* or better. Corequisite: MEGR 3251. First of a two-semester sequence leading to a major integrative experience in applying the principles of design and project management to the design of an automotive engineering system. Teamwork and communication skills are emphasized. An examination of various aspects of automotive and motorsports engineering presented by faculty and industry representatives.

MEGR 3356. Motorsports Engineering Clinic III. (2) (O) Prerequisite: admission to Motorsports concentration and MEGR 3355 with a grade of *C* or better. A continuation of MEGR 3355 including project execution, project reporting and leading to an oral presentation and a final written report. An examination of various aspects of automotive and motorsports engineering presented by faculty and industry representative.

MEGR 3695. Mechanical Engineering Cooperative Education Seminar. (1) Required of Co-op students during semesters immediately following each work assignment for presentation of engineering reports on work done the prior semester.

MEGR 3890. Individualized Study. (1-3) Prerequisite: permission of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses. May be repeated for credit. *(Technical Elective)*

MEGR 3990. Undergraduate Research. (1-4) Prerequisite: Permission of the department. Independent study of a theoretical and/or experimental problem in a specialized area of mechanical engineering. Topics originate from the student or the faculty member supervising the study. May be repeated for credit. (*Technical Elective*)

MEGR 4112. Intermediate Fluid Mechanics and Vehicle Aerodynamics. (3) Prerequisites: MEGR 3111 and 3114, both with a grade of *C* or better. Technical elective. A continuation of MEGR 3114. Topics include flow over body surfaces, lift and drag, boundary layers, ground effect, potential flow theory and compressible

flow. Application of aerodynamics to ground vehicles and its effect on vehicle performance and handling. *(Technical Elective)*

MEGR 4113. Energy Conversion I. (3) Prerequisites: MEGR 3112 and MEGR 3114, both with a grade of *C* or better. Application of principles of thermodynamics, fluid flow and heat transfer to internal combustion engines, compressors, turbines, heat exchanges, refrigeration, and cryogenics. (*Technical Elective)*

MEGR 4127. Introduction to Robotics. (3) Crosslisted as ECGR 4161. Prerequisites: ECGR 3101, or senior standing in ME or EE Departments. Modeling of industrial robots, homogeneous transformations, static forces, kinematics, velocities, dynamics, computer animation of dynamic models, motion trajectory planning, and introduction to vision, sensors and actuators. *(Technical Elective)*

MEGR 4131. Solid State Transformations. (3) Prerequisite: MEGR 3161 with a grade of *C* or better. Thermodynamics, morphology and kinetics of solid state transformations. Diffusion and absolute reaction rate theory; crystallographic nature of phase transformations; nucleation and growth processes; precipitation and oxidation reaction. *(Technical Elective)*

MEGR 4143. Discrete Mechanical Vibrating Systems. (3) Prerequisites: MEGR 3122 with a grade of *C* or better. Free and forced vibrations of lumped parameter systems with multi-degrees of freedom. Topics include transient and steady state response, determination of natural frequencies and mode shapes with and without damping. Introduction to principal coordinates and matrix iteration techniques. (*Technical Elective*)

MEGR 4144. Intermediate Dynamics. (3) Prerequisites: MEGR 3121 and MATH 2171, both with a grade of *C* or better. Further studies in dynamics of particles and rigid bodies, with engineering applications. Introduction to Lagrange's equations of motion. Multi-degree-of-freedom vibrations. (*Technical Elective*)

MEGR 4162. Materials Production and Process. (3) Prerequisites: MEGR 3161, with a grade of *C* or better, and permission of instructor. Applications of thermodynamics and chemistry to extractive process metallurgy. Fundamental principles of materials forming operations. Casting, mechanical working and joining methods. *(Technical Elective)*

MEGR 4165. Introduction to Nondestructive Evaluation Methods. (3) Prerequisite: MEGR 3161, with a grade of *C* or better. Nondestructive evaluation principles and techniques, including liquid penetrate, magnetic particle, acoustic emission, ultrasound, radiography and eddy currents. (*Technical Elective*)

METEOROLOGY (METR)

METR 3140. Introduction to Meteorology & Climatology. (3) Prerequisite ESCI 1101-1101L or permission of instructor. Fundamental physical principles of weather and climate. Analysis of short and long term atmospheric behavior are introduced. Topics include solar radiation, temperature, moisture, wind and pressure, synoptic systems, regional climates, paleoclimates, climatic change, and applied climatology. *(Fall)*

METR 3210. Atmosphere Thermodynamics. (3) Prerequisite: METR 3140, or permission of instructor. The study of the physical processes associated with atmospheric thermodynamics and stability. Topics include: atmospheric composition, the equation of state, hydrostatics, the first and second laws of thermodynamics for dry, moist, and saturated air, atmospheric stability, parcel buoyancy, and thermodynamic diagrams. Three hours of lecture per week. *(Spring, On demand)*

METR 3220. Physical Meteorology. (3) Prerequisite: METR 3140. Properties of aerosols and clouds, cloud nucleation and precipitation processes, and atmospheric electricity. Introduction to radar meteorology. Three hours of lecture per week. *(Spring)*

METR 3240. Boundary-Layer Meteorology. (4) Prerequisites: METR 3140, MATH 1241, or permission of instructor. Examines the flows of energy, water, and gases within the planetary boundary layer and the exchange of energy and mass at the earth's surface. Theories of interactions within the boundary-layer. Three hours of lecture and one three-hour lab per week. *(Spring)*

METR 3245. Synoptic Meteorology. (4) Prerequisite: METR, 3140, MATH 1241, or permission of instructor. An extension of ESCI 3250 to include atmospheric modeling, analysis of air mass structure, synoptic analysis with quantitative forecasting techniques, severe storm characteristics, wind shear, boundary-layer meteorology, and techniques for differentiating climatic regime traits and analysis of their variation through time. Three hours of lecture and one three-hour lab per week. (*Fall*)

METR 3250. Dynamic Meteorology. (3) Prerequisites: METR 3140, MATH 1241, or permission of instructor. In-depth examination of atmospheric dynamics, including horizontal flow in the atmosphere, characteristics of fluid flow applied to the atmosphere, and general circulation models. Three hours of lecture, three hours of lab, per week. *(Spring)*

METR 3252. Weather Analysis Laboratory. (1) Prerequisite or corequisite: METR 3245 and permission of instructor. Weather observation, meteorologic data collection and analysis, and techniques of weather forecasting. May be repeated for credit. *(On demand)*

METR 3330. Weather Forecasting. (3) Prerequisite: METR 3245, or permission of instructor. This course will focus on weather forecasting: real-time, short-term, and long-term. Verification techniques will be studied. Three hours of lecture per week. *(Spring, On demand)*

METR 3340. Weather Communications. (3) Prerequisite: METR 3245, or permission of instructor. A survey of the field of weather communications covering weather forecasting principles, television and radio broadcasting, science writing, forensic meteorology, and forecasting for business applications. Three hours of lecture per week. *(Fall, On demand)*

METR 4000. Selected Topics in Meteorology. (1-4) Prerequisites: METR 3140 or permission of the instructor. In-depth treatment of specific topics selected from meteorology. May be repeated for credit as topics vary. *(On demand)*

METR 4150. Applied Climatology. (3) Prerequisite: METR 3250 or permission of instructor. Methods of acquiring and analyzing climactic data in various types of applied problems. Emphasis on methods to assess and reduce the impact of weather and climate upon human activities. *(Spring)*

METR 4245. Advanced Synoptic Meteorology. (3) Prerequisites: METR 3245, METR 3250. An extension of METR 3245 sufficient to develop an integrated view of dynamic and synoptic meteorology. Included are a survey of conceptual models and analysis techniques for mesoscale atmospheric features, cumulus convection, and tropical storms. Three hours of lecture per week. *(Spring, On demand)*

METR 4250. Advanced Dynamic Meteorology. (3) Prerequisites: METR 3245, METR 3250, or permission of instructor. In-depth examination of atmospheric dynamics, focusing on the structure and evolution of synoptic scale dynamical and convective weather systems, and atmospheric modeling. Three hours of lecture per week. *(Fall, On demand)*

METR 4320. Tropical Meteorology. (3) Prerequisites: METR 3245 and METR 3250, or permission of instructor. A comprehensive study of the tropical atmosphere, including climatology, mean structure and circulation, air-sea energy exchange, cumulus transport, synoptic waves, and tropical storms. Special attention is paid to the formation, evolution, motion, and societal impacts of hurricanes. Three hours of lecture per week. *(Fall, On demand)*

METR 4350. Mesoscale Meteorology. (3) Prerequisites: METR 3245 and METR 3250, or permission of instructor. A comprehensive study of the structure, evolution, and dynamics of atmospheric phenomena having spatial scales between 2 and 200 km. Topics include: fronts, convective initiation, mesoscale convective systems, severe thunderstorms, tornadoes, low-level jets, land-sea breezes, and terrain effects. Three hours of lecture per week. *(Spring, On demand)*

METR 4400. Internship in Meteorology. (3-6) Prerequisite: Permission of the department. Research and/or work experience designed to be a logical extension of a student's academic program. The student must apply to Department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The Department will attempt to place the selected students in cooperating community organizations to complete specified research or work-related tasks which are based on a contractual arrangement between the student and community organization. The student can receive three to six hours credit, depending on the nature and extent of the internship assignment. *(On demand)*

METR 4800. Individual Study in Meteorology. (1-4) Prerequisite: Permission from the Department and credit hours established in advance. Tutorial study or special research problems. The student must request permission for independent study from an individual faculty member. May be repeated for credit as topics vary. *(On demand)*

MANAGEMENT (MGMT)

MGMT 1140. Introduction to Business. (3) Prerequisite: less than 45 hours earned. Fundamentals of business including marketing, management, production, accounting, finance, economics, information systems and other business areas. A general elective course that does not satisfy a requirement for any concentration or major in The Belk College of Business. *(On demand)*

MGMT 3000. Topics in Management. (3) Prerequisite: junior standing. Topics from the area of Management and Administration. The course may be repeated for credit. (*On demand*)

MGMT 3140. Management and Organizational Behavior (3) Prerequisites: ACCT 2121, 2122; ECON 2101, 2102, INFO 2130; junior standing. A study of the role of manager with an emphasis on understanding the behavioral and administrative theories and concepts needed to succeed in contemporary organizations. Topics covered in the course include motivation, leadership, managing teams, and teamwork. (*Fall, Spring, Summer) (Evenings)*

MGMT 3160. Business Communications. (3) (W) (O) Prerequisite: INFO 2130, junior standing. The nature and problems of individual, interpersonal and organizational communication in business. Various verbal techniques such as business presentations and writing will be developed and practiced for effective organizational and individual performance. (*Fall, Spring, Summer) (Evenings)*

MGMT 3241. Human Resource Management. (3) Prerequisite: MGMT 3140 with a *C* or better. The study of effectively selecting, utilizing, assessing and developing managers as well as the role of the Human Resource Department in administering human resources in a changing and demanding environment. Experience in developing and utilizing behavioral science research methods to assess effectiveness. *(Fall, Spring) (Evenings)*

MGMT 3243. Employment Law. (3) Crosslisted as ECON 3107. Prerequisite: MGMT 3140 with a *C* or better. This course examines the legislation which impacts human resource management practices in union and non-union settings. Topics covered include fair employment practices, anti-discrimination law, representation elections, unfair labor practices, compensation and benefit legislation, privacy concerns and dispute settlement processes. (*Fall) (Evenings*)

MGMT 3244. Advanced Human Resource Management. (3) Prerequisite: MGMT 3140 with a *C* or better. Management Majors who have elected the Human Resource Management Concentration, MGMT 3241. Advanced topics in human resource management including strategic human resource planning, job analysis, human resource information systems, training, career development, and international human resource management. Case studies, projects and presentations are used to help students apply concepts and theories to current human resource issues. (*Spring*)

MGMT 3260. Managerial Communication. (3) Prerequisites: MGMT 3140 with a *C* or better and MGMT 3160. An examination of the roles of communication networks and strategies in managerial decision making. Emphasis on the role of the communication skills in managing change, organizational conflict, and corporate cultures. Cases will be used to analyze and address specific management problems.

MGMT 3274. International Business Processes and Problems. (3) Prerequisite: MGMT 3140 with a *C* or better. Management Majors and International Business Majors. Junior standing. An introduction to the process, institutions and problems associated with exporting, importing and management of multinational businesses. (*Fall, Spring*)

MGMT 3275. International Management. (3) Prerequisites: MGMT 3140 with a *C* or better, MGMT 3274 and senior standing. Preparation for effective management in a world characterized by intense international competition. Case studies, projects, and presentations assist students to apply concepts and theories. *(Fall, Spring)*

MGMT 3277. Entrepreneurship. (3) Prerequisites: major in management. Review of the processes by which continuous and discontinuous innovations are developed into intellectual property and then utilized as the basis for intellectual property commercialization. Cognitive aspects of innovation and creativity are covered as well as issues with patents, copyrights, trademarks, and intellectual property protection. The course presents a commercialization model by which innovations are developed into commercial products. (*Fall*).

MGMT 3280. Business Policy. (3) Prerequisites: Senior standing and completion of ECON 3125, OPER 3100, MKTG 3110, FINN 3120, BLAW 3150, MGMT 3140 with a *C* or better and MGMT 3160. (Accounting majors are required to take OPER 3100, MKTG 3110, FINN 3120, MGMT 3140, BLAW 3150, and either MGMT 3160 or COMM 1101.) Concerns the role of top management of the firm in integrating internal functions and environmental forces. Emphasis on defining economic, technological, ethical, political and social factors affecting the firm and their consideration in setting goals and operating policies. (*Fall, Spring, Summer) (Evenings*)

MGMT 3282. Managerial Ethics. (3) Prerequisites: MKTG 3110, MGMT 3140 with a *C* or better and BLAW 3150. A study of the impact of management decisions on customers, employees, creditors, shareholders, community interests, ecology, and government (including taxes and the regulatory environment). The objective is to provide future managers with a systematic way of analyzing the impact of management decisions on larger society.

MGMT 3287. Managerial Leadership. (3) Prerequisite: MGMT 3140 with a *C* or better. A managerial perspective on leadership in formal organizations. Emphasis is placed on team-building, exercising influence, decision-making, and conflict management. Pedagogical tools to be used include role playing, case analyses, self-assessment of leadership competencies, and shadowing of working managers. *(Fall, Spring)*

MGMT 3500. Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the Department's cooperative education and 49ership students during each semester they are working in a position. This course is restricted to majors in the Department of Management. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (*Fall, Spring, Summer*)

MGMT 3800. Directed Study. (1-6) Prerequisites: Permission of the department and junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. (*On demand*)

MARKETING (MKTG)

MKTG 3000. Topics in Marketing. (3) Prerequisites: MKTG 3110 with a *C* or better, or permission of the Department. Topics from the area of marketing. This course may be repeated for credit as topics vary. (*On demand*)

MKTG 3110. Marketing Concepts. (3) Prerequisites for College of Business majors: ACCT 2121 and 2122 with a *C* or better, ECON 1201 and 1202 with a *C* or better, INFO 2130 or College Micro Computer Proficiency Test with a *C* or better, junior standing. Designed to acquaint the student with the marketing concept, various aspects of the marketing-external environment interface, and interrelatedness with other functional areas. Provides marketing majors with a foundation for further study, while offering non-marketing majors a survey of marketing's function in business organizations.

MKTG 3210. Marketing Research and Analysis. (3) Prerequisites: MKTG 3110 with a *C* or better, STAT 1220. An applications course that covers the entire research process including problem identification, secondary and primary data collection, scaling techniques, questionnaire design, reliability and validity, experimental design, sampling, data analysis, and data communication. (*Fall, Spring*)

MKTG 3211. Advertising and Promotions Management. (3) Prerequisites: MKTG 3110 with a *C* or better. Covers all areas of marketing promotion, including such topics as advertising, media selection, packaging and sales promotion. Offers basic skills and techniques to allow the student to enter careers in advertising or media. (*Fall ,Spring*)

MKTG 3212. Retailing Management. (3) Prerequisite: MKTG 3110 with a *C* or better. Presents retailing as a part of the marketing distribution phase of a total interactive marketing system. Key concepts covered include consumer and market analysis, store location, store layout, merchandising, pricing and promotional issues and problems. Also considers legal and environmental implications. Emphasis on application of class concepts through case analysis and class discussion. (*Fall, Spring*)

MKTG 3213. Professional Selling and Sales Management. (3) Prerequisite: MKTG 3110 with a *C* or better. An overview of skills and knowledge involved in individual selling and management of sales programs. Emphasis on sales and sales management theories and their applications. (*Fall, Spring*)

MKTG 3214. Internet Marketing. (3) Prerequisites: MKTG 3110 with a *C* or better, INFO 2130 or College Micro Computer Proficiency Test with a *C* or better. Emphasis on developing successful Internet marketing strategy based on quantitative and qualitative analysis of customer, competitors and channel members. Incorporates online and offline communication media and hands-on experience with Internet applications. *(Fall)*

MKTG 3215. Global Marketing Management. (3) Prerequisites: MKTG 3110 with a *C* or better. A course that assesses global market opportunities, develops global market strategies, and implements global market plans. Major topics covered include examining cultural, social, legal, political, financial, and geographical environments. The marketing mix elements are studied in the global environment. (*Fall, Spring*)

MKTG 3216. Consumer Behavior. (3) Prerequisite: MKTG 3110 with a *C* or better. Examination of consumer decision-making processes in the purchase, usage and disposal of goods, services and ideas. Emphasis on understanding consumption-related behaviors and the development and evaluation of marketing strategies intended to influence those behaviors. Particular focus on managing changes in consumption behavior. (*Fall, Spring*)

MKTG 3219. Marketing Strategy. (3) Prerequisites: MKTG 3110 with a *C* or better, completion of at least three marketing elective courses, and senior standing. Integration of all marketing elements in a strategic planning framework. Emphasis on areas of strategic importance, especially those which have significant implications and relevance for marketing policy decisions in competitive situations. *(Fall, Spring)*

MKTG 3220. Sports Marketing. (3) Prerequisite: MKTG 3110 with a grade of C or better. The course will explore the strategies necessary for success in marketing sports events, products and services. The course will build knowledge, skills, and practical understanding of the nature, contexts and dynamics of sports marketing and critically explore the product, pricing, promotion, and distribution – the strategies – available to sports and sports-related businesses. *(Fall)*

MKTG 3400. Marketing Internship. (3) Prerequisites: Junior and senior marketing majors in good standing, with the completion of MKTG 3110 with a *C* or better and two Marketing electives. Requires permission of the department. Provides a meaningful work experience in a field of marketing. Requires 150 hours of supervised employment, 50 hours per credit hour. Internship proposals can be initiated by the student or by the Department. Student should consult the Department Chair well in advance of registration to discuss availability of positions. Proposal forms must be completed and approved prior to registration. Graded on Pass/No Credit basis. Cannot be repeated for credit or taken for credit at the same time or following any other internship for credit. *(Fall, Spring, Summer)*

MKTG 3500. Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the department's cooperative education and 49ership students during each semester they are working in a position. This course is restricted to majors in the Department of Marketing. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center.

(*Fall, Spring, Summer*)

MKTG 3800. Directed Study. (1-3) Prerequisites: Permission of the department and junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. The proposal must be approved by the Department chair. (*On demand*)

MILITARY SCIENCE (MSCI)

MSCI 1101. Introduction to ROTC. (1) Preprofessional corequisite: MSCI 1101L. Introduction to ROTC and the U.S. Army including the rationale of the national defense structure and the mission and the role of the Army. Participation in the physical fitness program is optional. *(Fall, Spring)*

MSCI 1101L. Introduction to ROTC. (0) Leadership lab. Practical application of the material learned in the corequisite course. *(Fall, Spring)*

MSCI 1102. Introduction to Leadership. (1) Pre-professional corequisite: MSCI 1102L. Learn and apply the principles of self-discipline and self-confidence in activities such as basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations, and marksmanship. Participation in the physical fitness program is optional. *(Fall, Spring)*

MSCI 1102L. Introduction to Leadership. (1) Leadership Lab. Practical application of the material learned in the corequisite course. *(Fall, Spring)*

MSCI 2101. Individual and Team Development. (2) Pre-professional corequisite: MSCI 2101L. Learn the fundamental of ROTC's Leadership Development Program (LDP). Ethics based training introduces students to military oral presentations, effective writing, and event planning. Map-reading techniques are also introduced. Participation in the physical fitness program is optional. *(Fall, Spring)*

MSCI 2101L. Individual and Team Leadership Development. (0) Leadership Lab. Practical application of the material learned in the corequisite course. *(Fall, Spring)*

MSCI 2102. Individual and Team Military Tactics. (2) Pre-professional corequisite: MSCI 2102L. Introduction to small-unit tactics. Students will conduct radio communications, do risk-assessments and study movement techniques while working with more experienced MSCI 3102 students. Participation in the physical fitness program is optional. *(Fall, Spring)*

MSCI 2102L. Individual and Team Military Tactics. (1) Leadership Lab. Practical application of the material learned in the corequisite course. *(Fall, Spring)*

MSCI 3101. Leading Small Organizations I. (3) Pre-professional corequisite: MSCI 3102L. Study in small group leadership, emphasizing public speaking. Each student is given at least five evaluated public speaking opportunities. Studies include staff functions, communications, advanced land navigation, marksmanship, and the advanced tactics. Participation in three one-hour sessions of physical fitness is mandatory. One weekend of exercise is required and three more are optional. *(Fall)*

MSCI 3101L. Leading Small Organizations I. (1) Leadership Lab. Practical application of the material learned in the corequisite course. *(Fall)*

MSCI 3102. Leading Small Organizations II. (3) Pre-professional corequisite: MSCI 2102L. Study in small group leadership, emphasizing written communication. Each student will be given at least five evaluated writing assignments. Studies focus on advanced tactics and leadership training. The course prepares students for Advanced Summer Camp where they compete against students from across the country in leadership ability. Ethical decision-making, and exercises in planning, organizing and executing tactical maneuvers are also areas of study. Participation in three one-hour sessions of physical fitness is mandatory each week. One weekend exercise is required and three others are optional. *(Spring)*

MSCI 3102L. Leading Small Organizations II. (1) Leadership Lab. Practical application of the material learned in the corequisite course. *(Spring)*

MSCI 4101. Ethics and Values of an Army Professional. (3) Pre-professional corequisite: MSCI 4101L. All training incorporates an emphasis on ethics and values. Plan, conduct, and evaluate activities of the ROTC cadet organization. Study the Army training management, administrative, judicial, and logistical systems with an emphasis on ethical standards, ethical decision-making process, and the professional and moral obligations of military officers. Participation in three one-hour sessions of physical fitness is mandatory each week. Participation in one weekend exercise is required, and three more are optional. *(Fall)*

MSCI 4101L. Ethics and Values of an Army Professional. (1) Leadership Lab. Practical application of the material learned in the corequisite course. *(Fall)*

MSCI 4102. Transition to Lieutenant. (3) Pre-Professional corequisite: Emphasis is on refining students into well-rounded leaders. Topics include: the role of an officer as a trainer, resolves ethical dilemmas, and refine counseling and motivating techniques. Military Law is a primary focus of the course. Participation in three one-hour sessions of physical fitness is mandatory each week. Participation in one weekend exercise is required, and three more are optional. *(Spring)*

MSCI 4102L. Transition to Lieutenant. (1) Leadership Lab. Practical application of the material learned in the corequisite course. *(Spring)*

MUSIC EDUCATION (MUED)

MUED 2100. Introduction to Music Education. (2) Introduction to the organization and various types/levels of music education. Overview of the ethical, legal, and instructional issues related to diversity in the classroom. Field-based activities in observing music classroom settings: 5 hours. *(Spring)*

MUED 2200. Foundations of Music Education. (2) Prerequisite: permission of the instructor. Introduction to the social, historical, and philosophical foundations of music education, major issues in American education, music education research, and instruction planning in music education. Field-based activities in observing music classroom settings: 5 hours. *(Fall)*

MUED 4141. Music Development and Learning. (2) Prerequisite: acceptance into the Professional Music Education track. This course if for all music education majors and is designed to provide foundational skills for music teaching in grades K-12, regardless of specialization. Students will approach the teaching of music through various perspectives of developmental and learning theory, music acquisition and learning theory, and different approaches to the teaching pf musical concepts and skills. Students will address their own philosophies of music education and will develop lesson planning strategies based on those philosophies guided by the National and North Carolina Standards for the Arts. Students will also explore reading instruction within the music curriculum. A minimum of five hours of field experience through observation is required. *(Fall)*

MUED 4190. Secondary Choral Methods. (2) Prerequisite: MUED 4141, MUSC 3135 and MUSC 4137. Corequisite: MUED 4190L. Rehearsal techniques, repertoire, and administration of junior and senior high school choral groups. Three contact hours. *(Fall)*

MUED 4190L. Choral Methods Lab. (1) Prerequisites: acceptance into the Professional Music Education track and permission of instructor. May be repeated for credit. Application of rehearsal methods with collegiate and public school choral ensembles. 10 hours of additional outside fieldwork required. Three contact hours. *(Fall)*

MUED 4192. General Music Methods and Materials K-12. (3) Prerequisite: MUED 4141. This course is designed for the general music specialist. The course includes general music methods and materials for elementary grades through high school. The primary focus will be on elementary school general music but will extend into teaching general music and non-performance based music courses in grades 6 through 12. Students will experience applications of Gordon's Music Learning Theory, and the approaches of Orff, Kodaly and Jacques-Dalcroze. Current school music theories and materials will also be explored and discussed. A minimum of ten hours of field experience is required through observation and teaching. *(Fall)*

MUED 4193. Secondary Music Methods. (2) Prerequisite: MUED 4141. Methods and materials for teaching general and non-performance-based music courses to middle school and senior high school students. Two contact hours. Field work required. *(On demand)*

MUED 4194. Elementary Instrumental Methods. (2) Prerequisite: MUED 4141. Study and analysis through individual evaluation and in-class group performance of current elementary instrumental method books and teaching strategies. Field work required. Three contact hours. *(Fall)*

MUED 4195. Secondary Instrumental Methods. (2) Prerequisite: MUED 4141. Musical, organizational, and administrative aspects of teaching junior and senior high school bands and orchestras. Field work required. Three contact hours. *(Spring)*

MUED 4270. Teaching Discipline: Assessment & Behavior in the Music Classroom. (2) Prerequisite: MUED 4141. This class guides students in developing specific methods that address unique discipline, teaching, and assessment concerns inherent in a music classroom. Students will develop specific techniques in the quantitative study and assessment of music behavior. *(Spring)*

MUED 4467. Student Teaching/Seminar: K-12 Music. (15) Prerequisite: approved application for student teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in an appropriate grade level setting. *(Fall, Spring)*

MUSIC (MUSC)

MUSC 1000. Freshman Music Seminar. (1) Prerequisite: acceptance as a music major. Designed to assist with the intellectual, musical, and social transition from high school to college by cultivating positive attitudes toward learning, increasing the involvement of students in departmental activities, providing an orientation to resources available to students, and developing habits that ultimately lead to success as a music major. *(Fall)*

MUSC 1100. Rudiments of Music. (3) Introductory skill-building course in music reading. *(Fall, Spring)*

MUSC 1101. Introduction to Sight Singing. (1) An introduction to basic sight-singing skills. Two contact hours. May be taken concurrently with Class Voice

(MUSC 1237) and/or Rudiments of Music (MUSC 1100). *(Fall, Spring)*

MUSC 1110. Orchestra. (1) A performing ensemble. May be repeated for credit. Three contact hours. (*Fall, Spring*)

MUSC 1111. Jazz Ensemble. (1) Prerequisite: audition. Corequisite: MUSC 1111L. An ensemble specializing in performance and study of music composed for standard "big band" instrumentation. Performs music styles from the Swing era to present day. May be repeated for credit. Three contact hours. *(Fall, Spring)*

MUSC 1111L. Jazz Ensemble Sectional Rehearsals. (0) Corequisite: MUSC 1111. Sectional rehearsals for MUSC 1111. *(Fall, Spring)*

MUSC 1112. Symphonic Wind Ensemble. (1) Prerequisite. Audition. Corequisite: MUSC 1112L. A performing ensemble open to advanced wind and percussion players from any major. Performs traditional and contemporary band literature in concerts twice each semester. Occasional concert tours and performances for important regional music events. May be repeated for credit. Three contact hours. *(Fall, Spring)*

MUSC 1112L. Symphonic Wind Ensemble Sectional Rehearsals. (0) Corequisite: MUSC 1112. Sectional rehearsals for MUSC 1112. *(Fall, Spring)*

MUSC 1113. Concert Band. (1) A performing ensemble open to all students and members of the community with experience playing wind and percussion instruments. No formal audition required, only a simple hearing to determine part placement. Performs traditional and contemporary band literature in concerts twice each semester. May be repeated for credit. Two contact hours. (*Fall, Spring*)

MUSC 1114. Basketball Band. (1) Prerequisite: permission of instructor. A performing ensemble for University athletic contests and other campus events. May be repeated for credit. Three contact hours. (*Fall, Spring*)

MUSC 1115. Guitar Ensemble. (1) Prerequisite: permission of instructor. A performing ensemble. May be repeated for credit. Three contact hours. (*Fall, Spring*)

MUSC 1118. Chamber Music Ensembles. (1) Prerequisite: Permission of instructor. Performance by small groups of specific works. May be repeated for credit. *(Fall, Spring)*

MUSC 1119. Special Instrumental Ensemble. (1) Prerequisite: acceptance as a music major and permission of instructor. An alternative to traditional ensembles listed above for students with specialized performance interests. May be repeated for credit. Three contact hours. *(Fall, Spring)*

MUSC 1120. University Chorale. (1) Prerequisite: permission of the instructor and completion of MUSC 1101, MUSC 1122, or MUSC 1123. Corequisite: MUSC 1120L. A mixed chorus that performs music of many styles from the Baroque period to the present. The enrollment ranges from 46 to 58 voices. Open to all UNC Charlotte students with extensive choral experience. May be repeated for credit. Three contact hours. *(Fall, Spring)*

MUSC 1120-001. University Chorale Soprano Section (enrollment cap 14)
MUSC 1120-002. University Chorale Alto Section (enrollment cap 12)
MUSC 1120-003. University Chorale Tenor Section (enrollment cap 8)
MUSC 1120-004. University Chorale Bass Section (enrollment cap 12)

MUSC 1120L. University Chorale Sectional rehearsals. (0) Corequisite: MUSC 1120. Sectional rehearsals for MUSC 1120. *(Fall, Spring)*

MUSC 1121. Chamber Singers. (1) Prerequisite: audition. A highly-select mixed ensemble that ranges in size from 15 to 26 voices. This ensemble specializes in virtuosic literature from the Renaissance, Early Baroque, and Contemporary periods. Open to all UNC Charlotte students. A full-year commitment is expected. May be repeated for credit. Three contact hours. *(Fall, Spring)*

MUSC 1122. Men's Chorus (Mallard Creek Chorale). (1) The Mallard Creek Chorale is a popular performing ensemble for men in the glee tradition. It draws upon majors from across campus and performs several times each semester – including occasionally performing off campus and at athletic events. The ensemble performs folk, spirituals, Broadway, patriotic, barbershop, du-wop, and other musical styles traditional for men's choruses. This ensemble is open to all male UNC Charlotte students with an interest in singing. Special emphasis is placed on building vocal technique and sight singing ability. May be repeated for credit. Three contact hours. *(Fall, Spring)*

MUSC 1123. Women's Glee (Charlotteans). (1) The Charlotteans is open to all female UNC Charlotte students with an interest in singing. This ensemble performs a vast array of music from Renaissance through contemporary composers. Emphasis is placed on building vocal technique and sight singing ability. May be repeated for credit. Three contact hours. *(Fall, Spring)*

MUSC 1124. Opera Workshop. (1) Prerequisite: audition. Performance of scenes, acts, and entire operas. May be repeated for credit. Three contact hours. *(Fall, Spring)*

MUSC 1128. Special Vocal Ensemble. (1) Prerequisite: acceptance as a music major and permission of instructor. An alternative to the traditional ensembles listed above for students with specialized experience. Enrollment restricted to music majors. May be repeated for credit. Three contact hours. (*Fall, Spring*)

MUSC 1133. The History of Rock Music. (3) A

chronological approach to the evolution of rock music, its varied styles and artists. (*Fall, Summer*)

MUSC 1134. The Evolution of Jazz. (3) A chronological approach to the history of jazz, its main styles and artists. (*Spring*)

MUSC 1140. Oboe Reedmaking. (1) Designing and adjusting American-style oboe reeds, including techniques for cane gouging, shaping, and sharpening the double-hollow-ground knife. May be repeated for credit. Two contact hours. *(Fall, Spring)*

MUSC 1150. Introduction to Band and Orchestra Instruments. (1) Prerequisite: acceptance as a music major. This course is designed to introduce general and choral music education specialists to instrument families most often found in school instrumental music programs. Its purpose is to provide basic knowledge of instruments to non-instrumental pre-service music teachers to use in the event they are requested to instruct an instrumental ensemble. Students will explore the history, acoustics, sound production and basic techniques of instruments in the brass, woodwind, string and percussion families. *(Fall)*

MUSC 1221. Classroom Instruments. (1) Prerequisite: acceptance as a music major or permission of instructor. A study of various elementary classroom instruments, including percussion, mallet (Orff) instruments, autoharp and guitar. Students will develop/review basic music-reading skills applicable to the playing and teaching of these instruments. One contact hour. *(Spring)*

MUSC 1222. Classroom Guitar Techniques. (2) Prerequisite: acceptance as a music major. Class instruction in guitar for the classroom music teacher. Introduction to the finger-style and plectrum techniques, capo use, transposing skills, and a broad vocabulary of chords, including bar and power cords. (*Spring*)

MUSC 1223. Woodwind Techniques I. (1) Prerequisite: acceptance as a music major. Playing and teaching techniques and materials for flute, oboe, clarinet, bassoon, and saxophone. *(Fall)*

MUSC 1224. Woodwind Techniques II. (1) Prerequisite: MUSC 1223. Continuation of MUSC 1223. *(Spring)*

MUSC 1225. Brass Techniques I. (1) Prerequisite: acceptance as a music major. Playing and teaching techniques and materials for trumpet, horn, trombone, euphonium, and tuba. *(Fall)*

MUSC 1226. Brass Techniques II. (1) Prerequisite: MUSC 1225. Continuation of MUSC 1225. *(Spring)*

MUSC 1227. String Techniques I. (1) Prerequisite: acceptance as a music major. Playing and teaching techniques and materials for violin, viola, cello, and bass. Two contact hours. *(Fall)*

MUSC 1228. String Techniques II. (1) Prerequisite: MUSC 1227. Continuation of MUSC 1227. *(Spring)*

MUSC 1229. Percussion Techniques. (1) Prerequisite: acceptance as a music major. Playing and teaching techniques and materials for snare drum, timpani, mallet percussion, and accessory instruments. *(Fall)*

MUSC 1230. Musical Structure and Style I. (2) Prerequisite: acceptance as a music major and MUSC 1100. Study of music fundamentals through simple tonality and 4-part writing. Three contact hours. *(Fall)*

MUSC 1231. Musical Structure and Style II. (2) Prerequisite: MUSC 1230. Further study of tonal relations, including secondary dominants and modulation. Three contact hours. *(Spring)*

MUSC 1233. Class Piano I. (1) Prerequisite: acceptance as a music major. Class instruction in piano. Three contact hours. *(Fall)*

MUSC 1234. Class Piano II. (1) Prerequisite: MUSC 1233. A continuation of MUSC 1233. Three contact hours. (*Spring*)

MUSC 1237. Class Voice. (1) Prerequisite: acceptance as a music major or permission of instructor. Class instruction in voice. May be repeated for credit. Three contact hours. *(Fall)*

MUSC 1238. Guitar Class I. (2) Class instruction in guitar using contemporary popular music from a text. Three contact hours. For non-music majors only. *(Fall, Spring)*

MUSC 1239. Guitar Class II. (2) Continuation of MUSC 1238. Three contact hours. For non-music majors only. *(Fall, Spring)*

MUSC 1240-1259. Applied Music. Courses consist of private instruction, a one hour lesson per week (2 credits). Minimum of one hour practice per day per credit hour. May be repeated for credit. Students must sign up for the required labs, MUSC 1300, and a large ensemble (MUSC 1110, MUSC 1112, MUSC 1113, MUSC 1120, or MUSC 1121) concurrently.

MUSC 1240. Applied Music: Euphonium. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1241. Applied Music: Trumpet. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1242. Applied Music: French Horn. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1243. Applied Music: Trombone. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1244. Applied Music: Tuba. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1245. Applied Music: Guitar. (2) Prerequisite: acceptance of a music major or permission of instructor. Corequisites: MUSC 1245L, MUSC 1300, and MUSC 1115. May be repeated for credit. *(Fall, Spring)*

MUSC 1246. Applied Music: Harp. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1110, MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1247. Applied Music: Organ. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1110, MUSC 1112, MUSC 1113, MUSC 1120, or MUSC 1121. May be repeated for credit. *(Fall, Spring)*

MUSC 1248. Applied Music: Piano. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1110, MUSC 1112 or MUSC 1113, MUSC 1120, or MUSC 1121. May be repeated for credit. *(Fall, Spring)*

MUSC 1249. Applied Music: Violin. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1110. May be repeated for credit. *(Fall, Spring)*

MUSC 1250. Applied Music: Viola. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1110. May be repeated for credit. *(Fall, Spring)*

MUSC 1251. Applied Music: Cello. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1110. May be repeated for credit. *(Fall, Spring)*

MUSC 1252. Applied Music: Bass. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1110. May be repeated for credit. *(Fall, Spring)*

MUSC 1253. Applied Music: Voice. (2) Prerequisite: acceptance of a music major or permission of instructor. Corequisites: all students must register for MUSC 1300 as well as MUSC 1120 or MUSC 1121. Additionally, students registered in MUSC 1253.A01 must register for MUSC 1253L.A01, students registered in MUSC 1253.A02 must register for MUSC 1253L.A02, and students registered in MUSC 1253.A03 must register for MUSC 1253L.A03. May be repeated for credit. *(Fall, Spring)*

MUSC 1254. Applied Music: Flute. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1255. Applied Music: Clarinet. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1256. Applied Music: Saxophone. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1256L, MUSC 1300, and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1256L. Saxophone Masterclass. (0) Corequisite: MUSC 1256. Weekly masterclasses for MUSC 1256. *(Fall, Spring)*

MUSC 1257. Applied Music: Oboe. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1258. Applied Music: Bassoon. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1259. Applied Music: Percussion. (2) Prerequisite: acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and MUSC 1112 or MUSC 1113. May be repeated for credit. *(Fall, Spring)*

MUSC 1260. Ear Training I. (1) Prerequisite: acceptance as a music major and MUSC 1101. The development of aural skills through sight singing, melodic, rhythmic, and harmonic dictation. Three contact hours. *(Fall)*

MUSC 1261. Ear Training II. (1) Prerequisite: MUSC 1260. Continuation of Ear Training I. Three contact hours. (*Spring*)

MUSC 1300. Recital and Concert Attendance. (0) Corequisite: Applied Lessons (MUSC 1240-1259). Lab for Applied Lessons. Graded on a Pass/Fail basis. *(Fall, Spring)*

MUSC 1401. Music Practicum. (1) Prerequisite: MUSC 1000. Practical application of work in the areas of equipment management, publicity, box office, house management, and stage management. May be repeated for credit. *(Fall, Spring)*

MUSC 2137. Phonetics and Articulation for Singers I. (2) Prerequisite: acceptance as a music major or permission of instructor. Pronunciation and articulation in vocal music in English and Italian. Three contact hours. (*Fall*)

MUSC 2138. Phonetics and Articulation for Singers II. (2) Prerequisites: MUSC 2137 and permission of instructor. Pronunciation and articulation in vocal music in German and French. Three contact hours. (*Spring*)

MUSC 2151. Introduction to Music Technology. (2) Prerequisite: permission of the instructor. The study of contemporary MIDI and computer related technologies available to musicians. *(Spring)*

MUSC 2191. Incorporating Music Into the Elementary Classroom. (3) Students will develop basic music skills that will allow them to choose, prepare, and teach appropriate music materials for inclusion in the classroom curricula. Non-music majors only. Three contact hours. Field work required. (*Fall*)

MUSC 2230. Musical Structure and Style III. (2) Prerequisite: MUSC 1231. Further study in tonal relations, including borrowed chords, Neapolitan and augmented sixth chords. Three contact hours. (*Fall*)

MUSC 2231. Musical Structure and Style IV. (2) Prerequisite: MUSC 2230. Study of late 19th and early 20th century chromaticism, including impressionism--may include a study of some formal designs. Three contact hours. (*Spring*)

MUSC 2233. Class Piano III. (1) Prerequisite: MUSC 1234. Continuation of Class Piano II. Three contact hours. (*Fall*)

MUSC 2234. Class Piano IV. (1) Prerequisite: MUSC 2233. Continuation of Class Piano III. Two contact hours. (*Spring*)

MUSC 2235. Jazz Improvisation I. (2) Prerequisites: MUSC 1230, MUSC 1231 and/or permission of instructor. An introduction to jazz theory and its execution through instrumental improvisation. Detailed study of harmony, chord/scale relationships, musical forms, and the integration of this knowledge into performance. (*Fall*)

MUSC 2236. Jazz Improvisation II. (2) Prerequisites: MUSC 2235 and/or permission of instructor. A continuation of MUSC 2235, with greater emphasis on performance and integration of advanced harmonic/melodic devices and concepts, solo transcriptions, basic piano voicings, and composition memorization. (*Spring*)

MUSC 2237. Counterpoint. (2) Prerequisite: permission of instructor. An introduction to the polyphonic techniques of 16th and 18th century music. (*Spring*)

MUSC 2260. Ear Training III. (1) Prerequisite: MUSC 1261. Continuation of Ear Training II. Three contact hours. (*Fall*)

MUSC 2261. Ear Training IV. (1) Prerequisite: MUSC 2260. Continuation of Ear Training III. Three contact hours. (*Spring*)

MUSC 2270. Music Notation Using Computer Software. (2) Prerequisite: Permission of instructor. A study of contemporary music notation methods using computer software. Two contact hours. *(On demand)*

MUSC 2271. Fundamental Recording Techniques. (1) Prerequisite: Permission of the Department. This course will provide music majors with a comprehensive and well-rounded education in fundamental areas of audio recording. One credit hour, once contact hour. Open to all music majors and other majors by permission of the instructor. *(Fall, Spring)*

MUSC 3001. Topics in Music. (1-6) Prerequisite: permission of instructor. Special topic in music. May be repeated for credit. (*On demand*)

MUSC 3134. Fundamentals of Conducting. (2) Prerequisite: MUSC 2231 and MUSC 2261. Conducting techniques for instrumental and choral ensembles. Field work required. Three contact hours. *(Fall)*

MUSC 3135. Choral Conducting. (2) Prerequisites: MUSC 2138, 3134, and 3170. Developing conducting skills for interpreting choral music. Field work required. *(Spring)*

MUSC 3136. Instrumental Conducting. (2) Prerequisite: MUSC 3134. Developing conducting skills for interpreting instrumental music. Field work required. (*Spring*)

MUSC 3139. Orchestration. (3) Prerequisite: MUSC 2231. Scoring and arranging for instruments and/or voice. (*On demand*)

MUSC 3150. Accompanying. (1) Prerequisite: permission of instructor. Accompanying techniques for pianists. Required accompanying of solos by other student musicians. Separate sections for piano majors and music educators. One contact hour. *(Fall, Spring)*

MUSC 3160. Guitar History and Literature. (2) A study of the development of the classical guitar repertoire, the styles and techniques of playing and the performance practices and the major composers from the 16th century to the present. Three contact hours. *(On demand)*

MUSC 3170. Music History I. (3) (W) Prerequisites: MUSC 2231 and MUSC 2261. Limited to music majors only. Music history and literature from Classical Antiquity through the Baroque Period. *(Fall)*

MUSC 3171. Music History II. (3) (W) (O) Prerequisite: MUSC 3170. Music history and literature from the Classical period to the present. *(Spring)*

MUSC 3197. Marching Band Techniques and Materials. (2) Prerequisite: acceptance as a music

major. Designed for music majors interested in teaching marching band, the course includes discussion of the organization and administration of marching band programs in school settings, the application of teaching techniques for the outdoor program and the practical use of computerized software for designing and teaching of field drills. Field-experience observations of school groups are required. Three contact hours.

MUSC 3275. MIDI Synthesis Technology. (2) Prerequisite: Permission of instructor. A study of contemporary computer-based sequencing software, MIDI keyboards, modules, controllers, and basic recording and arranging techniques. Two contact hours. *(Summer)*

MUSC 3831. Composition. (2) Prerequisite: permission of instructor. Private instruction. May be repeated for credit. One contact hour. (*Spring*)

MUSC 4001. Topics in Music. (1-6) Prerequisite: permission of instructor. Special topic in music. May be repeated for credit. (*On demand*)

MUSC 4132. Guitar Pedagogy and Materials. (3) Prerequisite: acceptance as a music major. An introduction to the teaching of the principles of classical guitar playing, including the performance practices and the music of major composers from the 16th century to the present. Three contact hours. *(On demand)*

MUSC 4133. Wind Pedagogy and Materials. (3) Prerequisite: acceptance as a music major. A methodology course dealing with the techniques and materials necessary for offering private instruction on woodwind and brass instruments. *(Spring)*

MUSC 4134. String Pedagogy and Materials. (3) Prerequisite: acceptance as a music major. A methodology course outlining the teaching techniques, materials and related literature necessary for offering applied instruction on string instruments. *(Spring)*

MUSC 4135. Percussion Pedagogy and Materials. (3) Prerequisite: acceptance as a music major. A methodology course dealing with the techniques and materials necessary for offering private instruction on percussion instruments. *(Fall)*

MUSC 4136. Keyboard Pedagogy and Materials. (3) Prerequisite: acceptance as a music major. A methodology course dealing with piano performance and teaching including: technique, learning procedures/styles, performance, physiology, methods, wellness issues, and technology. *(Fall)*

MUSC 4137. Vocal Pedagogy and Materials. (3) Prerequisite: acceptance as a music major and two semesters of MUSC 1253. A methodology course designed to present the physiological and acoustical bases for a coherent approach to the teaching of singing. Areas of vocal technique to be studied include the physiology of the voice, posture, breathing, onset of sound, articulation, vocal registration, and other related areas. *(Spring)*

MUSC 4138. Jazz Pedagogy and Materials. (3) Prerequisite: acceptance as a music major. The teaching and conducting of public school instrumental and vocal jazz ensembles, including rehearsal techniques, concert presentation, the history and theory of jazz, sources for appropriate teaching materials and improvisation techniques. Field work required. Three contact hours. *(Spring)*

MUSC 4145. Orchestration and Arranging. (3) Prerequisite: acceptance as a music major. Techniques used to arrange music for instrumental and vocal ensembles from existing sources. Three contact hours. *(Fall)*

MUSC 4230. Form and Analysis. (3) Prerequisite: MUSC 2231. Study of larger musical structures such as symphony, concerto, contrapuntal designs, and 20th century approaches to form and analysis. *(Fall)*

MUSC 4231. Post-tonal Processes. (3) Prerequisite: MUSC 4230. Study of 20th century music, including Neoclassicism, Post-serialism, Minimalism, and Neo-romanticism. *(Spring)*

MUSC 4900. Senior Project. (3) Prerequisite: permission of the chairperson and successful completion of all portions of the Sophomore Screening examination. The project may consist of written historical, theoretical, or technological research; original compositions recorded and performed; or a lecture supported by written original research and documentation. *(Fall, Spring)*

NURSING: RN (NURN)

NURN 3103. Concepts of Professional Nursing Service. (3) Prerequisite: Admission to RN/BSN curriculum or permission of instructor. Introduces professional nursing with emphasis on theoretical, ethical, and legal models guiding practice. *(Fall, Spring)*

NURN 3108. Health Assessment for Nurses. (3) Prerequisites: Admission to the RN-BSN Program, BIOL 1274, BIOL 1259. Pre- or corequisites: NURN 3103. Corequisite: NURN 3108L. Evaluation of human function using interview and physical examination data within a framework for clinical decision making. Competencies necessary for holistic health assessment across the lifespan. *(Fall, Spring)*

NURN 3108L. Health Assessment Lab. (0) Prerequisite: Admission to the RN-BSN Program. Corequisite: NURN 3108. Evaluation of human function using interview and physical examination data within a framework for clinical decision making. Competencies necessary for holistic health assessment across the lifespan.

NURN 4100. Aging and Health. (3) Restricted to RNs enrolled in the RN/BSN Program. Prerequisites: NURN 3108; CHEM 1203; SOCY 1101 or ANTH 1101; and

PSYC 1101. Examination of physiological process of aging as a normal life experience. Study of psychological, nutritional, and general health issues designed to facilitate high level wellness. *(Fall, Spring)*

NURN 4201. Information Technology: Applications in Health Care. (2) Prerequisite: Upper-division standing or permission of instructor. A study of the use of computers and information technology in health care. Emphasis is placed on development of the knowledge and competencies necessary for selective use of evaluation of informatics, computer technology and data management in health care. *(Spring, Summer)*

NURN 4203. Leadership in Nursing Practice. (2) Prerequisite: Admission to the RN-BSN Program and NURN 3103. Analysis of professional nursing practice in relation to current trends and issues in health care delivery systems. *(Fall, Summer)*

NURN 4440. Community Health Nursing. (6) (W) Prerequisites: Admission to the RN-BSN Program, STAT 1220, BIOL 1259, CHEM 1203, BIOL 1274, ENGL 1101, and SOCY 1101 or ANTH 1101, and NURN 3103. Development of competencies for the nursing care management of culturally diverse individuals, families, and populations within communities with emphasis on the nurse's role in health promotion and maintenance. Particular focus on risk identification and reduction throughout the life span. Multiple community-based agencies are utilized. Access to a working automobile is required for each clinical day. *(Spring, Summer)*

NURN 4450. Design and Coordination of Care. (6) (O) Prerequisites: Admission to the RN-BSN Program, BIOL 1259, BIOL 1274, CHEM 1203, NURN 4201, NURN 4203, NURN 3108, and NURN 4900. Clinical practicum incorporating theory-based practice in a variety of settings with clients who have multiple health care needs. Emphases are on clinical judgment and decision-making, diagnostic reasoning, clinical ethics, collaboration and case management. Examination of nursing therapeutics within the structure of nursing process and nursing diagnosis. *(Fall, Spring)*

NURN 4900. Research in Nursing Practice. (3) Prerequisites: Admission to the RN-BSN Program, STAT 1220, ENGL 1101, and NURN 3103. Exploration of the theoretical foundations of nursing with emphasis on research, theories, concepts and processes leading to their application in practice.*(Fall, Summer)*

NURSING (NURS)

NURS 2100. General Nutrition. (2) Prerequisite: CHEM 1204 or 1252. A solid knowledge base of general nutrition viewed from a life cycle perspective. Exploration of behavioral aspects and scientific concepts related to nutrition. Open to Pre-nursing majors, sophomore standing. *(Fall, Spring)*

NURS 2200. Human Growth and Development. (3) Pre- or corequisites: BIOL 1273 and 1273L. Study of the developing person through the lifespan by examining the relationship of selected environmental and social factors to human growth and development. Consideration of the meaning of health and illness to the individual, the family, and the community within the context of life as a continuing, dynamic process from conception through death. Open to Pre-nursing majors, sophomore standing. *(Fall, Spring)*

NURS 2201. Communication in Caring Relationships. (2) Prerequisites: ENGL 1101, ENGL 1102, PSYC 1101, and SOCY 1101 or ANTH 1101. Introduction to essential communication competencies within the context of helping relationships. Emphasis is on communication processes, cultural competence, and skills in a therapeutic relationship. Open to Pre-nursing majors, sophomore standing. *(Fall, Spring)*

NURS 3102. Introduction to Nursing Science. (3) Prerequisite: Admission to the Nursing Major. An introduction to the theoretical and scientific basis of nursing practice, including an overview of the profession and examination of major concepts, theories, and models. *(Fall, Spring)*

NURS 3105. Concepts of Professional Nursing. (2) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 3106 (Skills Set I) and NURS 3108 (Health Assessment.) Concepts and standards fundamental to professional nursing practice. Explores the unique role of nursing in the healthcare system. *(Fall, Spring)*

NURS 3106. Skill Set I – Basic. (1) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 3105 (Concepts of Professional Nursing.) Introduction of skills and psychomotor activities for the basic care of simulated clients. Three hours of skills lab practice per week in a learning module format. *(Fall, Spring)*

NURS 3107. Pathophysiology: Clinical Concepts of Illness and Disease. (3) Prerequisite: Admission to the Nursing Major. Conceptual basis of alterations in physiological processes that disrupt or impair health and the body's response to illness and disease. Building on knowledge obtained in previous courses in the biological and social sciences, this course provides a foundation for building critical thinking skills in the differentiation of disease and illness. *(Fall, Spring)*

NURS 3108. Health Assessment. (3) Prerequisites: Admission to the Nursing Major. Pre- or corequisites: NURS 3105, NURS 3106, and NURS 3107. Corequisite: NURS 3108L. Evaluation of human function using interview and physical examination data within a framework for clinical decision making. Competencies necessary for holistic health assessment across the lifespan. *(Fall, Spring)*

NURS 3108L. Health Assessment Lab. (0) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 3108. Evaluation of human function using interview and physical examination data within a framework for

clinical decision making. Competencies necessary for holistic health assessment across the lifespan.

NURS 3120. Introduction to Community Health Nursing. (2) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 3420. Introduction to community health theory focusing on concepts of health promotion, human diversity, community organizations, and influences of the environment and the health care system. Includes nurse's role in meeting national health priorities and principles of assessing communities and communicable disease control. *(Fall, Spring)*

NURS 3205. Pharmacology in Health and Illness. (3) Prerequisites: Admission to the Nursing Major and NURS 3107 or permission of instructor. Presentation of the theoretical base for the safe and therapeutic use of drugs. Examination of Pharmacologic agents commonly used in health and illness and the standards and societal controls of drugs are explored. *(Fall, Spring)*

NURS 3206. Skill Set II – Intermediate. (1) Prerequisites: Admission to the Nursing Major and NURS 3106. Corequisites: NURS 3430 and NURS 3440. The acquisition of intermediate psychomotor activities for the care of simulated clients with intermediate disease processes. Three hours of skills lab per week in a learning module format. After successful completion of this course, students will be eligible to be listed on the North Carolina Board of Nursing Nurse Aide II Registry. *(Fall, Spring)*

NURS 3230. Illness and Disease Management. (3) Prerequisite: Admission to the Nursing Major. Corequisites: NURS 3206 and NURS 3430. Focus on health promotion strategies and nursing interventions appropriate for planning care of adult clients with basic pathophysiological alterations. *(Fall, Spring)*

NURS 3240. The Emerging and Developing Family. (3) (W) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 3440. Foundations of nursing care of families during the childbearing and childrearing years. Emphasis on health assessment, health promotion and promotion of adaptive processes of the individual and the family during pregnancy, birth transition to parenthood and childhood from infancy through adolescence, including alterations in family. This course meets the university General Education Requirement for three semester hours of a Writing in the Discipline Course. *(Fall, Spring)*

NURS 3420. Practicum in Community Assessment. (1) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 3120. Application of community health theory focusing on assessment of communities, diverse groups and organizations. Forty-five clinical hours (45 hrs.) Access to a working automobile is required for all clinical experiences. *(Fall, Spring)*

NURS 3430. Practicum Illness and Disease Management. (3) Prerequisites: Admission to the Nursing Major and NURS 3108. Pre- or Corequisites: NURS 3206 and NURS 3230. Clinical practice in health care settings that correlates with theoretical content related to basic pathophysiological alterations. Students will provide care in diverse clinical settings to develop psychomotor sills and apply knowledge in making clinical decisions. *(Fall, Spring)*

NURS 3440. Practicum with the Emerging and Developing Family. (3) Prerequisites: Admission to the Nursing Major and NURS 3108. Pre- or Corequisite: NURS 3206. Corequisite: NURS 3240. Development of competencies essential for the nursing care of families during the childbearing and childrearing years. A variety of clinical experiences are provided, including community-based care, patient education, and in-patient care, with an emphasis on family-centered nursing practice. *(Fall, Spring)*

NURS 3895. Independent Study in Nursing. (1-4) Prerequisite: permission of the instructor. Directed individual study in a selected aspect of nursing which is explored in greater depth than included in the planned curriculum. May be repeated for additional credit as focus of the study varies. No more than six hours in NURS 3895 and/or 4090 may be counted toward degree requirements. (*On demand*)

NURS 4000. Topics in Nursing. (1-3) Prerequisite: permission of the instructor. Critical examination of selected current topics in nursing. (*Fall, Spring*)

NURS 4090. International Comparative Health Systems: Western Europe. (3) Crosslisted as HLTH 4090. A two-week study tour to explore the cultures, social, and health care systems in Western Europe and to compare them with systems in the United States. Participants will visit a variety of health care sites and attend presentations by practitioners and educators. They will have opportunities to interact with people from the host countries and visit a variety of cultural and historic sites. (*Summer*)

NURS 4100. Nursing Care of the Aging Adult. (3) Prerequisite: Senior Standing in the Nursing Program. Examination of the processes of aging. Study of the nursing care for healthy, aging adults; frail, aging adults; institutionalized, aging adults; and dying, aging adults. *(Fall, Spring)*

NURS 4106. Skill Set III – Complex. (1) Prerequisite: Admission to the Nursing Major and NURS 3206. Corequisite: NURS 4130. The acquisition of complex psychomotor skills in caring for simulated clients with complex disease processes. Three hours of skills lab per week in a learning module format. *(Fall, Spring)*

NURS 4120. Psychiatric Mental Health Nursing. (2) Prerequisites: Admission to the Nursing Major and NURS 3430 and NURS 3440. Corequisite: NURS 4420. This course provides the foundation of Psychiatric Mental Health Nursing with emphasis on biopsychosocial content in the understanding and care of acute and chronic and chemically dependent clients. *(Fall, Spring)*

NURS 4130. Complex Illness and Disease Management. (3) Prerequisites: Admission to the Nursing Major and NURS 3230. Prerequisite or corequisite: NURS 4106. Corequisite: NURS 4430. Illness and disease management of adult patients with complex pathophysiological alterations. Focus is on care management of clients with complex and pathophysiological health needs. *(Fall, Spring)*

NURS 4191. Women's Health Issues. (3) Crosslisted as WMST 4191. Prerequisite: WMST 1101 or permission of the instructor. Exploration of contemporary issues in women's health from the feminist and women's health movement perspectives. (*Yearly*)

NURS 4192. Enhancing Clinical Judgment. (3) Prerequisites: Admission to the RN-BSN Completion option or instructor's permission. Enhances student's ability to make sound nursing clinical judgments. Students have the opportunity to (a) reflect on their own style of thinking, (b) examine the role of critical thinking in making clinical judgments, (c) learn strategies for enhancing critical thinking and clinical reasoning, (d) practice applying the strategies in a variety of case studies, (e) critically study their own clinical practice, and (f) benefit from learning via on-line group discussion with peers. *(On demand)*

NURS 4193. Professional Communication: Clinical Decision Making and Ethical Reasoning. (3) Prerequisite: Admission to the major. This course is designed to provide the student with skills needed to interact with clients, families, and other health professionals. A variety of communication strategies that facilitate more effective functioning as a professional are explored. Experiential activities and online seminars are designed to enhance awareness of personal and professional values in relation to ethical questions in practice. Students are challenged to synthesize communication strategies based on principles from nursing, psychology, communications and other disciplines. *(On demand)*

NURS 4194. Building Community Response to Domestic Violence. (3) Open to non-nursing majors. Emphasizes an understanding of professional helping roles in the prevention and intervention of domestic violence. The course emphasizes the importance of a "community" response to domestic violence that includes the role of law enforcement, health care, men's treatment, and women's shelter and advocacy programs. (*On demand*)

NURS 4201. Information Technology: Applications in Health Care. (2) A study of the use of computers and information technology in health care. Emphasis is placed on development of the knowledge and competencies necessary for selective use, and the evaluation of information, and computer technology and data management in health care. *(Fall, Spring)*

NURS 4203. Leadership in Nursing Practice. (2) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 4450. Introduction to leadership focusing on health care systems and the nurse's role. Explore external and internal forces that affect the work environment and how to influence those forces. Discuss the work environment that best motivates people and creates an atmosphere that inspires, instills confidence and sustains individuals. Incorporate understanding of self to enhance beginning leadership. *(Fall, Spring)*

NURS 4240. Population Focused Nursing. (2) Prerequisites: Admission to the Nursing Major ,NURS 3120 and 3420. Corequisite: NURS 4440. Examination and analysis of concepts and theories related to care of populations from a perspective of social justice. Focuses on health indicators and risk reduction in diverse groups across the lifespan and development of community partnerships within health care systems. *(Fall, Spring)*

NURS 4420. Practicum in Psychiatric Mental Health Nursing. (3) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 4120. Development of competencies necessary for the practice of psychiatric mental health nursing. Emphasis is on the use of self in relationships, psychiatric nursing assessment, nursing interventions with clients and working as a member of the health care team. A variety of clinical settings are used. *(Fall, Spring)*

NURS 4430. Practicum in Complex Illness & Disease Management. (3) (O) Prerequisites: Admission to the Nursing Major, NURS 3230, and NURS 3430. Corequisites: NURS 4106, NURS 4130. Clinical practice in health care settings that correlate with theoretical content related to complex pathophysiological alterations. Students will provide care in diverse clinical settings to continue to develop psychomotor skills and apply knowledge for clinical decision-making and reasoning. this course meets the university General Education Requirement for Oral Communication. *(Fall, Spring)*

NURS 4440. Practicum in Population Focused Nursing. (1) Prerequisites: Admission to the Nursing Major, NURS 3120, and NURS 3420. Corequisite: NURS 4240. Development of competencies related to care of diverse populations. Precepted experiences occur in a variety of communities and agencies that provide opportunities for interdisciplinary experiences. Forty-five clinical hours (45 hrs.) Access to a working automobile is required for all clinical experiences. *(Fall, Spring)*

NURS 4450. Design and Coordination of Care. (3) (W) Prerequisites: Admission to the Nursing Major and NURS 4430. Corequisite: NURS 4203. Clinical application of knowledge and skills in the design, management, and coordination of care for clients in a variety of health care settings. Precepted clinical experience with written clinical decision making projects. This course meets the university General Education requirements for Writing in the Discipline. *(Fall, Spring)*

NURS 4900. Research in Nursing Practice. (2) Prerequisite: Admission to the Nursing Major. Exploration of research methodologies relative to nursing

practice, with emphasis on research utilization and evidence-based practice. (*Fall, Spring*)

OPERATIONS MANAGEMENT (OPER)

OPER 3000. Topics in Operations Management. (3) Prerequisite: OPER 3100. Topics from the areas of Operations Management. The course may be repeated for credit. (*On demand*)

OPER 3100. Operations Management. (3) Prerequisites: MATH 1120, STAT 1220, ACCT 2121, 2122; ECON 2101, 2102; INFO 2130; junior standing. Introduction to and development of the management functions in manufacturing and non-manufacturing organizations. A systems approach to the organizational environment, the basic operating functions, the problems and decisions a manager encounters and solution techniques and models. Computer application are included where appropriate. (*Fall, Spring, Summer) (Evenings*)

OPER 3201. Advanced Operations Management. (3) Prerequisite: OPER 3100 with a *C* or better or permission of the department. Cases and/or management simulations enable the student to apply the knowledge attained in Operations Management. The student, through an application forum, should develop in greater depth his/her understanding of the operating functions of an organization. (*Fall*)

OPER 3203. Management Science. (3) Prerequisite: OPER 3100 with a *C* or better or permission of the department. Analytical approach to understanding the management process and solving management problems with emphasis on existing models and developing insights for problem development and model building. (*Fall, Spring*)

OPER 3204. Management of Service Operations. (3) Prerequisites: OPER 3100 with a *C* or better or permission of the department. Solving problems and directing employees in service organizations. Topics include location, design, layout, queuing, capacity, scheduling, routing, change, management and quality control. (*Spring*)

OPER 3206. Managing for Quality. (3) Prerequisites: OPER 3100 with a *C* or better or permission of the department. A study of management philosophy, practices and analytical processes implemented in quality planning and administration of products and services. Topics include corporate culture, quality design, human factors and motivation, quality cost analyses and auditing, service quality, quality assurance, quality circles, and conformance to design. (*Fall, Spring*)

OPER 3208. Supply Chain Management. (3) Prerequisites: OPER 3100 with a *C* or better or permission of the department. Supply chain management is concerned with all of the activities performed from the initial raw materials to the ultimate consumption of the finished product. From a broad perspective, the course is designed to examine the major aspects of the supply chain: the product flows; the information flows; and the relationships among supply chain participants. The course content is interdisciplinary in nature and will cover a variety of topics such as supply chain information technologies, supply chain design, strategic alliances between supply chain participants and supply chain initiatives. (*Spring*)

OPER 3500. Cooperative Education and 49ership Experience. (0) Prerequisite: Major in Management Information Systems or Operations Management. Enrollment in this course is required for the Department's cooperative education and 49ership students during each semester they are working in a position. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (*Fall, Spring, Summer*)

OPER 3800. Directed Study. (1-6) Prerequisites: Permission of the department and junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. (*On demand*)

OPERATIONS RESEARCH (OPRS)

All OPRS/MATH/STAT courses offered by the Department of Mathematics and Statistics are approved to satisfy requirements for the Problem Solving Goal of UNC Charlotte Education.

OPRS 3111. Operations Research: Deterministic Models. (3) Prerequisites: MATH 1242 and 2164. Linear, integer and dynamic programming, the simplex method, networks, PERT and CPM techniques, game theory, and applications. *(On demand)*

OPRS 3113. Operations Research: Probabilistic Models. (3) Prerequisite: MATH 1242, 2164, and STAT 2122 or MATH/STAT 3122, or permission of the department. Queuing models, inventory models, simulation, markov chains, decision analysis, game theory and probabilistic dynamic programming. *(On demand)*

OPRS 4010. Topics in Decision Mathematics. (2-3) Prerequisite: Permission of the department. Topics in decision mathematics selected to supplement regular course offerings in this area of mathematics. May be repeated for additional credit with the approval of the

Department. Credit for the M.A. degree in Mathematics requires approval of the Department. *(On demand)*

OPRS 4113. Game Theory. (3) Prerequisites: OPRS 3111 and one of STAT 2122, MATH/STAT 3122, or OPRS 3113. The theory of zero-sum matrix games, mini-max theorem, optimal strategies, symmetric games, economic models, infinite, separable, polynomial, multi-stage, general-sum and in-person games. A project will be required of all graduate students. *(On demand)*

OPRS 4114. Dynamic Programming. (3) Prerequisites: ITCS 1214, OPRS 3111, and one of STAT 2122, MATH/STAT 3122 or OPRS 3113. The identification of dynamic programming problems and their solution in terms of recurrence relations. Elementary path problems, resource allocation, shortest path, traveling salesmen problem, discrete-time optimal control, replacement models, and inventory systems. A project will be required of all graduate students. *(On demand)*

PHILOSOPHY (PHIL)

PHIL 1105. Critical Thinking. (3) Fundamental skills of clear thinking and critical assessment of typical messages by and between persons in everyday situations. Application of logical methods to advertisements, editorials, political speeches and textbooks to distinguish effective from ineffective forms of reasoning. (*Fall, Spring, Summer*)

PHIL 2101. Introduction to Philosophy. (3) Basic concepts and problems of philosophy such as freedom and determinism, mind-body interaction, the status of moral judgments, and the nature of knowledge. Readings from the works of representative philosophers both classical and contemporary. Crosslisted as PHIL 2102, but does not fulfill the general education writing goal. Students can receive credit for either PHIL 2101 or PHIL 2102, but not both. *(Fall, Spring, Summer) (Evenings)*

PHIL 2102. Introduction to Philosophy – Writing Intensive. (3) (W) Basic concepts and problems of philosophy such as freedom and determinism, mind-body interaction, the status of moral judgments, and the nature of knowledge. Readings from the works of representative philosophers both classical and contemporary. Makes substantial use of writing as a tool for learning. Crosslisted as PHIL 2101, but fulfills the general education writing goal. Students can receive credit for either PHIL 2101 or PHIL 2102, but not both. *(Fall, Spring, Summer) (Evenings)*

PHIL 2105. Deductive Logic. (3) Principles of deductive logic, both classical and symbolic, with emphasis on the use of formal logic in analysis of ordinary language discourse. (*Fall, Spring, Summer) (Evenings*)

PHIL 2165. Introduction to Political Philosophy. (3) Crosslisted as POLS 1170. Survey course which includes an introduction to recognized major political thinkers such as Plato, Aristotle, Hobbes, Locke, Rousseau, and Marx. Included are other politically influential writers such as Confucius, Mary Wollstonecraft, and Martin Luther King. *(Fall, Spring)*

PHIL 2175. Professional Ethics. (3) Basic concepts, principles and cases in ethics for the professions, including a reasoning model for ethical decisions, basic principles and codes of professional ethics, and actual case scenarios from the professions. *(Yearly)*

Prerequisites for upper-level courses. While PHIL 2101 is not a prerequisite for courses at the 3000 level and above, students who have taken PHIL 2101 typically benefit more from upper level philosophy courses than students who have not.

PHIL 3050. Topics. (3) Prerequisite: permission of the department. Topics chosen from specific areas in philosophy such as freedom and determinism, imagination, detailed study of significant philosophical movements or works. May be repeated for additional credit with the approval of the Department. (*On demand*)

PHIL 3060. Major Figure in Philosophy. (3) Prerequisite: permission of the department. An investigation into the thoughts and writings of a major figure in philosophy with special emphasis on primary sources. Included may be Plato, Aristotle, Descartes, Kant, Heidegger, and others as indicated by departmental needs and interests. May be repeated for additional credit. (*On demand*)

PHIL 3201. Meaning of Death. (3) Crosslisted as RELS 3201. Death in the western tradition. Philosophical, religious, existential, psychological and literary readings clarifying conceptual problems in our ways of speaking about death. Understanding death as a horizon for understanding life. (*On demand*)

PHIL 3205. Philosophy In and Of Literature. (3) Relationship between philosophy and literature with special emphasis on the nature of literature as it presents concepts and evaluations. Readings will be in the theory of literature as well as in contemporary novels, plays and short stories for both their philosophical and their aesthetic properties. (*On demand*)

PHIL 3207. Narrative Philosophy. (3) (W) Prerequisites: Declared Philosophy major or minor; at least junior standing or permission of the instructor. Explores the use of autobiographical and personal writing in philosophy. *(Alternate years)*

PHIL 3211. Ancient Philosophy. (3) Western intellectual and philosophic thought from the early Greeks to the post-Aristotelian period. Readings from the pre-Socratics, Plato, Aristotle, Epicureans, Stoics, Skeptics and Neoplatonists. (*Fall*)

PHIL 3212. Medieval Philosophy. (3) Western philosophical tradition from Augustine to William of Ockham. Readings include such other authors as

Anselm of Canterbury, Bonaventure, Thomas Aquinas and Duns Scotus. (*On demand*)

PHIL 3213. Modern Philosophy from Descartes to Kant. (3) Modern philosophic and scientific thought. Readings selected from representative works in the 17th to the 19th centuries. (*Spring*)

PHIL 3214. Contemporary Philosophy. (3) Main problems of contemporary philosophy; pragmatism, logical positivism, linguistic analysis, existentialism. (*On demand*)

PHIL 3217. American Philosophy. (3) European philosophic movements with counterparts in American thought, leading to distinctly American pragmatism, realism and humanism. Readings from 19th- and 20th-century philosophers. (*On demand*)

PHIL 3219. History of Ethical Theory. (3) Study of major ethical theories in western philosophical tradition: Plato, Aristotle, Kant, Butler, and Mill. Examination of the fundamental approaches to ethics in the western philosophical tradition and of the historical connections among these fundamental theories. Historical connections include the earlier insights and arguments accepted by later thinkers and the development of concepts from earlier theories to later ones. *(Alternate years)*

PHIL 3221. Ethics. (3) (O) A study of the nature and foundations of moral judgment, the principles and criteria for sound moral decisions, and the application of these to contemporary moral issues. Discussion includes such specific problems as: abortion, capital punishment, privacy, war, and sexual morality. (*On demand*)

PHIL 3223. Existentialism. (3) Existentialist tradition in philosophy and literature including such issues as: authenticity, absurdity and the meaning of life, freedom and morality, anguish, death, and atheism. (*On demand*)

PHIL 3225. Aesthetics. (3) Major theories of art, including readings from Aristotle, Kant, Nietzsche, Collingwood, Dewey, Langer and Beardsley. Emphasis on expression, criticism, the work of art, and the creative process. (*Spring*)

PHIL 3226. Social and Political Philosophy. (3) Crosslisted as POLS 3177. Philosophical concepts involved in understanding and evaluating the basic structure of societies (e.g., economic, educational, legal, motivational and political) including equality, fraternity, freedom and rights. Relevance to contemporary social and political issues stressed. Readings from classical and contemporary sources. Taught by Philosophy Department. (*On demand*)

PHIL 3227. Feminist Philosophy. (3) Crosslisted as WMST 3247. Views of contemporary feminist and female philosophers on traditional philosophical issues such as ethics, human nature, the construction of knowledge, modes of social and political organization, the relationship between the mind and the body, and the nature of God. *(Alternate years)*

PHIL 3228. Healthcare Ethics. (3) (W) Major ethical dilemmas within medical science and biology are examined to assist students to identify, analyze, and decide ethical issues in such a way that they can defend their positions to themselves and others. Issues include reproductive and genetic technology, death and dying, patient rights, and justice in distribution of healthcare benefits and burdens. *(Yearly)*

PHIL 3231. Business Ethics. (3) Ethical problems confronting business as a social institution and individuals in business. Application of ethical theory to business institutions and practices, internal exchanges of business (e.g., hiring, promotions, working conditions, employer/employee rights and duties) and external exchanges (e.g., product safety, environment, depletion, marketing, advertising.) (*Spring*)

PHIL 3235. Advanced Logic. (3) Advanced systems of logic, with emphasis upon symbolic logic and formal systematic characteristics such as axiomatics and proof techniques. (*On demand*)

PHIL 3241. Philosophy of Education. (3) Exploration of classic Western approaches to education and the contemporary moral problems faced by America's schools. Issues to be considered are the effect of race, class, and gender on school culture and teacher preparation. *(Alternate years)*

PHIL 3242. Philosophy of Religion. (3) Crosslisted as RELS 3242. Philosophical implications of religious experience including the definitions, development and diverse forms of the problems of belief and reason in modern thought. (*On demand*)

PHIL 3243. Philosophy of Peace. (3) Crosslisted as LBST 2101-H01. Examination of the nature of peace in relation to the history of war and theory of justice. Relationship between individual, local, state and global values and to the status of the nuclear arms race in the post-cold war world. *(Fall)*

PHIL 3244. Philosophy of Body. (3) Opportunity to explore physically as well as mentally the implications of the eastern and western philosophical literature on what the body means to individuals and societies. Philosophical readings about the body's relationship to the mind, politics, happiness, social interaction and education will be explored through lecture, discussion, writing, and the daily practice of hatha yoga and other physical activities. *(Summer)*

PHIL 3245. Philosophy of Mind. (3) Conceptual issues in the mind/body problem and the problem of other minds. Analysis of concepts of intention, motivation, consciousness, imagination and emotion. (*On demand)*

PHIL 3247. Philosophy of Science. (3) Epistemological, methodological, metaphysical, interdisciplinary and meta-disciplinary issues arising out of science with "science" construed very broadly to imply a strong connection with all systematic inquiry, either past or

present, into natural or social questions. (*On demand*)

PHIL 3249. Philosophy of Technology. (3) Examination of basic concepts and controversies concerning technology, science, values, and the nature of both ethical and practical judgments. Influence of technology on attitudes toward the environment and self will be combined with more recent concerns such as the siting of hazardous waste dumps and the impact of computer technology on daily lives. Normative and analytic approach is taken toward such issues as hazard assessment, risk management, and decision strategies on democratic control and intelligent use of technical innovation in ways that advance public welfare. *(Alternate years)*

PHIL 3264. Philosophy of Language. (3) An inquiry into the nature of language that will show the close relation of the Anglo-American tradition to logic and the Continental tradition to linguistics. In addition to focusing on the resulting theories of meaning, the course will address special topics such as linguistic creativity and linguistic violence. *(On demand)*

PHIL 3265. Theory of Knowledge. (3) A study of various theories on the nature, foundations and limits of knowledge. Analysis of the notions of knowledge and belief, evidence and the sources of knowledge. Discussion of the principles and criteria for distinguishing knowledge from opinion or belief. Readings from both classical and contemporary sources. (*On demand*)

PHIL 3275. Metaphysics. (3) Inquiry into the most fundamental and comprehensive structures and categories of reality, especially in relation to persons as knowers and agents. Discussion of such topics as: being, existence and truth; substance, essence and accident; universals and individuals; mind, soul, matter and God. (*On demand*)

PHIL 3452. Internship in Applied Ethics (3) Prerequisite: Declared philosophy major or minor; at least junior standing; selection by department. Field experience includes on-site visits to host companies, corporations, or agencies to investigate ethics codes, policies, culture, and practices. Background ethics research on ethics challenges facing the host organization today. Final reports evaluated by faculty advisor and shared with the host organization. *(On demand)*

PHIL 3791. Honors Thesis I. (2) Prerequisite: permission of the department. Individual or group inquiry into selected philosophic problems. Exposition and discussion of the results. *(Fall, Spring)*

PHIL 3792. Honors Thesis II. (2) Prerequisite: permission of the department. A continuation of PHIL 3791 focused on the preparation and presentation of an Honors thesis. *(Fall, Spring)*

PHIL 3851. Practicum in Philosophy. (1-3) Prerequisite: permission of the department. Directed individual study involving the student and instructor in rethinking and reworking some major problems in the teaching of undergraduate philosophy including interaction with a particular class, usually PHIL 1105, 2101 or 2105, in the preparation, presentation and evaluation of the course. (Not for teacher licensure.) (*On demand*)

PHIL 3853. Research Methods and Publication. (3) Permission of the instructor required. Individual instruction in current methods of research in philosophy through participation in major faculty research project. No more than six hours may apply towards the major in Philosophy. *(On demand)*

PHIL 3859. Independent Study. (1-3) Prerequisite: permission of the department. Directed individual study of a philosophical issue of special interest to the student. May be repeated for additional credit as the topics vary and with departmental approval. No more than six hours may apply toward the major in Philosophy. (*On demand*)

PHIL 4050. Topics in Philosophy. (3) Prerequisite: permission of the department. Extra work is required of students receiving graduate credit. Selected problems and issues in philosophy. May be repeated for additional credit as topics vary. (*On demand*)

PHYSICS (PHYS)

PHYS 1000. New Student Seminar. (1) Prerequisite: Permission of Department and student must be a declared Physics major. An introduction to the different disciplines within physics, professional opportunities available to physics majors in industry and academia, research interests of the Department, and opportunities for student research in the Department. The course is offered on a Pass/No Credit basis. This class is required for all physics majors. *(Fall)*

PHYS 1101. Introductory Physics I. (3) Corequisite: PHYS 1101L. First semester of a two semester algebra-based introductory sequence in physics. Introduction to the fundamental principles of natural phenomena. Topics include kinematics and dynamics of particles, momentum, work, energy, conservation laws, and mechanics of rigid bodies. A knowledge of basic algebra and trigonometry is needed for this class. Three lecture hours each week. (*Fall, Spring, Summer*)

PHYS 1101L. Introductory Physics I Laboratory. (1) Corequisite: PHYS 1101. Laboratory investigations illustrating experimental techniques and fundamental principles of natural phenomena. Three laboratory hours each week. *If a student has completed PHYS 2101L with a grade of C or better in a previous semester, the student is exempted from taking PHYS 1101L.* (*Fall, Spring, Summer*)

PHYS 1102. Introductory Physics II. (3) Corequisite: PHYS 1102L; Prerequisite: PHYS 1101 with a grade of C or better. Second semester of the algebra-based introductory sequence in physics. An introduction to

topics in electromagnetism, optics, and nuclear physics. A knowledge of basic algebra and trigonometry is needed for this class. Three lecture hours each week. (*Fall, Spring, Summer*)

PHYS 1102L. Introductory Physics II Laboratory. (1) Prerequisite: PHYS 1101L (or 2101L). Corequisite: PHYS 1102. A continuation of PHYS 1101L. Three laboratory hours each week. *If a student has completed PHYS 2102L with a grade of C or better in a previous semester, the student is exempted from taking PHYS 1102L.* (*Fall, Spring, Summer*)

PHYS 1130. Introduction to Astronomy. (3) Historical beginnings of astronomy. Motions of celestial bodies. Introduction to space science. The solar system. Optical and radio astronomy. Structure and evolution of stars. Galaxies, cosmology. Three lecture hours each week. (*Fall, Spring, Summer*)

PHYS 1130L. Introduction to Astronomy Laboratory. (1) Prerequisite or corequisite: PHYS 1130. Experimental investigations relating to the acquisition of and interpretation of astronomical data. One three-hour laboratory each week. (*Fall, Spring, Summer) (Evenings)*

PHYS 1201. Sports and Physics. (3) Fundamental physics concepts will be introduced and discussed using only sports-related applications, primarily golf, baseball/softball, and auto racing. Specific physics concepts include forces, Newton's Laws, conservation of energy, conservation of linear momentum, conservation of angular momentum, Bernoulli's principle for fluid flow, centripetal force, vibrations and sound, and heat transfer. In addition, an understanding of materials characteristics will be important to the discussions. *(Fall, Spring)*

PHYS 1201L. Sports and Physics Laboratory (1) Corequisite: PHYS 1201. Experimental investigations illustrating the physical principals related to sports activities. Laboratories will include analysis of the physics involved in activities such as basketball, baseball, golf, tennis, soccer, hockey, and football. *(Fall, Spring)*

PHYS 1202. Introduction to Physics in Medicine. (3) An introductory level course that covers the basics physics principles behind technologies currently used in medicine. The course will examine topics in surgical instrumentation and medical imaging (e.g., the use of lasers in medicine, MRI, ultrasound, CT scanning, and nuclear medicine.) Three lecture hours each week. *(Fall)*

PHYS 2101. Physics for Science and Engineering I. (3) Prerequisite: MATH 1241 with a grade of C or better. Corequisite: PHYS 2101L, MATH 1242. First semester of a two semester calculus-based introductory sequence in general physics. Topics include kinematics and dynamics of particles, momentum, work, energy, conservation laws, simple harmonic motion, and mechanics of rigid bodies. Three lecture hours each week. (*Fall, Spring, Summer*)

PHYS 2101L. Laboratory I. (1) Corequisite: PHYS 2101. Experiments selected from mechanics, heat, electricity and magnetism, wave motion and optics. Use of the computer for organizing, graphing and analyzing data. Two laboratory hours each week. *If a student has completed PHYS 1101L with a grade of C or better in a previous semester, the student is exempted from taking PHYS 2101L. (Fall, Spring, Summer) (Evenings)*

PHYS 2102. Physics for Science and Engineering II. (3) Prerequisites: PHYS 2101 and MATH 1242, both with a grade of C or better. Corequisite: PHYS 2102L. Second semester of the calculus-based introductory sequence in general physics. Topics include electric charge, electric fields, and magnetic fields. Three lecture hours each week. (*Fall, Spring, Summer*)

PHYS 2102L. Laboratory II. (1) Prerequisite: PHYS 2101L (or 1101L). Corequisite: PHYS 2102. A continuation of PHYS 2101L. Two laboratory hours each week. *If a student has completed PHYS 1102L with a grade of C or better in a previous semester, the student is exempted from taking PHYS 2102L. (Fall, Spring, Summer) (Evenings)*

PHYS 3000. Topics in Physics. (1-4) Prerequisite: Permission of Department. Special topics which are introductory in nature. May not be applied toward the degree requirements for "additional hours at the 3000/4000 level" without approval of the departmental Undergraduate Studies Committee. May be repeated. (*On demand*)

PHYS 3101. Topics and Methods of General Physics. (3) Prerequisites: PHYS 2102 and MATH 1242 both with a grade of C or better. Covers additional topics in physics at an introductory level. Subjects will include gravitation, angular momentum, wave motion, geometrical and physical optics, electromagnetic waves, fluid dynamics, and thermodynamics. An emphasis is placed on developing additional background and problem solving skills necessary for students to succeed in upper division physics courses. *(Spring)*

PHYS 3121. Classical Mechanics I. (3) Prerequisites: PHYS 3101 (or ECGR 2112) and MATH 2171 both with a grade of *C* or better. Pre or corequisite: MATH 2241. First course of a two-semester sequence treating particle dynamics, the motion of systems of particles, rigid body motion, moving coordinate systems. Lagrange's equations, Hamilton's equations and small oscillations. *(Fall)*

PHYS 3141. Introduction to Modern Physics. (3) Prerequisite: PHYS 2102 (or PHYS 1102) and MATH 1241, both with a grade of *C* or better. Corequisite: MATH 1242. Topics include: Special relativity, quantization of charge, light, and energy, the nuclear atom, wavelike properties of particles, introduction to nuclear reactions and applications, introduction to solid state physics, and introduction to particle physics. *(Fall, Spring)*

PHYS 3151. Thermal Physics. (3) Prerequisites: PHYS 3141 and PHYS 3101, both with a grade of C or

better, CHEM 1251 and 1251L, MATH 2241. An introduction to heat, thermodynamics, kinetic theory, and statistical physics. Topics include classical thermodynamics, Maxwell-Boltzmann, Fermi-Dirac and Bose-Einstein distributions. Three lecture hours a week. *(Spring)*

PHYS 3160. Astrophysics I (Stellar Astrophysics). (3) Prerequisites: PHYS 3141 and MATH 2171 or permission of instructor. An introduction to stellar structure and evolution. Topics covered include observational techniques, the interaction of light and matter, spectral classification, stellar structure and energy transport, nuclear energy sources, evolution off the main sequence, variable stars, and stellar remnants. *(Spring) (Odd years)*

PHYS 3161. Astrophysics II (Interstellar Matter and Galaxies). (3) Prerequisites: PHYS 3141 and MATH 2171 or permission of instructor. An introduction to the structure and contents of galaxies. Topics covered include the interstellar medium, star formation, galactic kinematics, galactic structure and evolution, active galaxies, and cosmology. *(Fall), (Odd years)*

PHYS 3282. Advanced Laboratory in Modern Physics. (3) (W) (O) Prerequisites: PHYS 3141 with a grade of *C* or better. Selected laboratory work in areas such as atomic spectra, radioactive decay, and the interaction of radiation with matter. Emphasis on development of sound laboratory techniques, methods of data analysis, oral communication of results, and the writing of formal laboratory reports. Three hours of laboratory each week. *(Spring)*

PHYS 3283. Advanced Laboratory in Classical Physics. (3) (W) Prerequisite: PHYS 3101 with a grade of *C* or better. Selected laboratory work in areas such as mechanics, electricity and magnetism, acoustics and thermal physics. Topics are chosen for their relation to important principles and techniques, or for their historical significance. Emphasis on development of sound laboratory techniques, methods of data analysis, and the writing of formal laboratory reports. Three hours of laboratory each week. *(Fall)*

PHYS 3400. Internship in Community Education and Service. (3) Prerequisites: junior standing, acceptance into the internship program and approval by the Physics Department. A project oriented, service-learning internship with cooperating community organizations. Does not count as credit toward departmental requirements in physics. May be repeated once with permission of the Department. This course is offered on a *Pass/No Credit basis*. *(On demand)*

PHYS 3590. Physics Cooperative Education and 49ership Experience. (0) Prerequisites: junior standing and permission of Department. Registration in PHYS 3590 is required of Co-op and 49ership students during each of the semesters they are working. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (*Fall, Spring, Summer*)

PHYS 3900. Senior Project. (2-3) Prerequisites: PHYS 3282 and 3283 and permission of the faculty member overseeing the project. Independent investigation under the supervision of faculty member on a project that is approved by the departmental Undergraduate Studies committee. May not be applied toward the degree requirements for "additional hours at the 3000/4000 level" without approval of the departmental Undergraduate Studies Committee. *(On demand)*

PHYS 4000. Selected Topics in Physics. (1-4) Prerequisite: Permission of Department. Advanced special topics. May not be applied toward the degree requirements for "additional hours at the 3000/4000 level" without approval of the departmental Undergraduate Studies Committee. May be repeated. (*On demand*)

PHYS 4140. Nuclear Physics. (3) Prerequisites: PHYS 3141 and MATH 2171 both with a grade of *C* or better. Pre or corequisite: PHYS 3121 (or MEGR 2144). A study of the nucleus, radioactivity, nuclear reactions, fission, fusion, interactions of radiation with matter and measurement of radiation. *(Fall)*

PHYS 4181. Solid State and Semiconductor Physics Laboratory. (3) Prerequisite: PHYS 4241 or MEGR 3131 or permission of instructor. Laboratory in solid state physics and semiconductor device physics, including electrical and photoconductivity; fluorescence, photoluminescence and Raman Scattering; semiconductor device characteristics; superconductivity; and the Hall Effect. Six laboratory hours each week. *(On demand)*

PHYS 4210. Theoretical Physics. (3) Prerequisite: Permission of Department. Topics include: Matrices, power series, solutions to ordinary and partial differential equations. Hilbert space, Fourier integrals, boundary value problems, Green's functions, and complex analysis. *(On demand)*

PHYS 4222. Classical Mechanics II. (3) Prerequisite: PHYS 3121, MATH 2241. Continuation of PHYS 3121. *(Spring)*

PHYS 4231. Electromagnetic Theory I. (3) Prerequisites: PHYS 3121 (or MEGR 2144), MATH 2171, and MATH 2241 all with a grade of *C* or better. The first course of a two-semester sequence. Topics covered include vector analysis, electrostatics and electric fields in matter. Three lecture hours each week. *(Spring)*

PHYS 4232. Electromagnetic Theory II. (3) Prerequisites: PHYS 4231 with a grade of C or better. A continuation of PHYS 4231. Topics covered include magnetostatics, electrodynamics, electromagnetic waves, potentials and fields. Three lecture hours each week. *(Fall)*

PHYS 4241. Quantum Mechanics I. (3) Prerequisites: PHYS 3141, MATH 2241 and MATH 2171, all with a grade of *C* or better. Corequisite or prerequisite: PHYS 3121 (or MEGR 2144). The first course of a two-semester sequence that provides a senior-level treatment of physical systems at the atomic level. Topics include: Planck's postulate and blackbody radiation, solutions of the time-dependent Schrödinger equation, one electron atoms, magnetic dipole moments, spin, and transition rates. *(Fall)*

PHYS 4242. Quantum Mechanics II. (3) Prerequisite: PHYS 4241 with a grade of *C* or better. A continuation of PHYS 4241. Topics include: multi-electron atoms, quantum statistics, molecules, conductors, and semiconductors. *(Spring)*

PHYS 4271. Waves and Optics. (3) Prerequisite: MATH 2171 with a grade of *C* or better. Corequisite or pre-requisite: PHYS 3121 (or MEGR 2144). Topics include ray analysis of common optical elements, wave properties of light, the superposition of periodic and non-periodic waves, and selected topics from geometrical and physical optics. *(Fall)*

PHYS 4281. Advanced Laboratory in Modern Optics. (3) (W) Prerequisites: PHYS 3141 and PHYS 3121 (or MEGR 2144) both with a grade of *C* or better. Selected experiments on topics such as fiber optics, interferometry, spectroscopy, polarization, and holography. Emphasis on the development of sound laboratory techniques, methods of data analysis, and the writing of formal laboratory reports. Six hours of laboratory each week. *(Spring, Even years)*

PHYS 4350. Teaching and Learning Physics. (3) Prerequisites: PHYS 2102 or permission of instructor. A course on how people learn and understand key ideas related to physics. Course focus includes physics content, pedagogical methods and curriculum, cognitive science, and physics education research. Course includes opportunities for teaching and individualized projects. *(Fall)*

PHYS 4800. Investigations. (1-2) Prerequisite: junior standing. An independent investigation on a topic approved by the Department Undergraduate Studies Committee. May be repeated for up to four hours credit. No more than two credit hours may be applied toward the degree requirements for "additional hours at the 3000/4000 level." (*On demand*)

POLITICAL SCIENCE (POLS)

Course offerings, including introductory courses, are divided into the following major subfields: American Politics and Public Administration, Comparative and International Politics, Political and Legal Philosophy, and Research and Practice of Political Science.

American Politics and Public Administration

POLS 1110. American Politics. (3) Introduction to the role of the President, Congress, Supreme Court, and national administrative agencies in the American political system. Relationship between the American people and their political institutions with emphasis on political culture, the electoral process, political parties, interest groups, and political communication. (*Fall, Spring, Summer*)

POLS 2120. Introduction to Public Policy. (3) Provides an overview of the policy process in the U.S. focusing on how public problems arise, how they get on the agenda of government, how and why the government responds or fails to respond, defining public policy, explaining how it is made, and who makes it. *(Yearly)*

POLS 3010. Topics in American Politics or Public Administration. (1-4) An intensive study of a topic in American politics or public administration. The particular topic investigated may vary from semester to semester, and a student may take more than one course under this number. (*On demand*)

POLS 3103. Public Opinion. (3) A study of attitude and opinion measurement with emphasis on the techniques of survey research and public opinion polling and conservative and liberal tendencies in American public opinion and society. *(Yearly)*

POLS 3104. Mass Media. (3) An examination of the relationship of mass media to politics and government. Government regulation of the media and how the mass media shape political information and behavior. *(Yearly)*

POLS 3105. Voting and Elections. (3) Psychological, sociological, and political variables that influence voting behavior and that affect electoral stability and change with emphasis on studies derived from survey research. *(Yearly)*

POLS 3108. Social Movements and Interest Groups. (3) Analysis of the nature of social movements and interest groups and their role in the American political system. Emphasis on membership recruitment and mobilization, campaigns, lobbying, and influence on parties, public opinion, and public policy. Evaluation of the extent to which these organizations enhance the voices of ordinary citizens versus those of corporations and citizens of high social status. *(Yearly)*

POLS 3109. Political Parties. (3) Analysis of the role of political parties in the American political system. Emphasis on party organizations, nominations, campaigns, interrelation with interest groups and social movements, and the role of parties in the executive, legislative, and judicial arenas. *(Yearly)*

POLS 3111. The Congress. (3) Analysis of the role of the Congress in the American political system and its

relationships with the other branches of government. Recruitment and socialization of congressmen, the committee system, and roll call analysis. *(Yearly)*

POLS 3112. The Presidency. (3) Analysis of the role of the Presidency in the American political system and its relationships with the other branches of government. Strategies of presidential nomination and election, the sources and indicators of presidential power, and how those who have held the office have shaped it and been shaped by it. *(Yearly)*

POLS 3114. Constitutional Law and Policy. (3) Development of American constitutionalism (especially federalism and the separation of powers) with major emphasis on constitutional law as a form of public policy and the U.S. Supreme Court as a policy maker. *(Yearly)*

POLS 3115. Civil Rights and Liberties. (3) Utilizes public policy analysis to illuminate judicial decisions and opinions relating to contemporary civil rights and liberties. *(Yearly)*

POLS 3116. Judicial Process. (3) Introduction to the nature and functions of law; survey of Supreme Court decision making. *(Yearly)*

POLS 3119. State and Local Government. (3) An introduction to state and local governments, politics, and policies in the United States. Particular attention is paid to state and local government in North Carolina. *(Yearly)*

POLS 3121. Urban Politics and Policy. (3) Political analysis of a variety of public policy problems in urban areas and proposals to solve them. Attention will be paid to both the substance of the urban policy problem and ways to evaluate alternative solutions. *(Yearly)*

POLS 3123. Urban Political Geography. (3) Crosslisted as GEOG 3110. Spatial organization of metropolitan America. How metropolitan residents organize space into territorial units and the human, social, and political ramifications of that organization. Spatial consequences of the most common modes of political, administrative, and territorial organization. *(Alternate years)*

POLS 3124. U.S. Domestic Policy. (3) Examination of the processes of and influences on policy making, including goals and objectives of current U.S. domestic policy. Focus on major policy areas; may include such topics as fiscal and monetary policy, education, transportation, management of national economy, and agriculture, among others. *(Yearly)*

POLS 3125. Health Care Policy. (3) An overview of the development and current functioning of U. S. health care system and public policies regarding the organization, delivery and financing of health care at the federal, state, and local levels. *(Yearly)*

POLS 3126. Administrative Behavior. (3) The role of the administrator and public bureaucracy in modern democratic society, with emphasis on the interplay of forces created by executives, legislators, political parties, and interest groups. *(Yearly)*

POLS 3128. Politics and Film. (3) Examination of the influence and role of film in American politics. Movies provide important cues about cultures, values, and society, and affect how people perceive or view their environment. Explores and analyzes the images and messages conveyed about American politics, and develops understanding of the role of film in American politics. Requires viewing films in class, discussion, and writing about the films. *(Yearly)*

POLS 4110. North Carolina Student Legislature. (3) (W) (O) Prerequisite: permission of instructor. Practicum including workshops, seminars, and guest speakers on legislative process and research, parliamentary procedure, and resolution and bill drafting; participation in an interim council debate at one of the member campuses for one weekend each month during the semester and participation in the NCSL annual session in Raleigh. May be repeated for credit. (*Spring*)

Comparative and International Politics

POLS 1130. Comparative Politics. (3) Introduction to political comparison among nations. Diverse geographical emphases, including Latin America, Europe, Asia, and Africa. Not taught as a writing intensive course. *(Fall, Spring, Summer)*

POLS 1150. International Politics. (3) Introduction to the analysis of politics among nations: Material and psychological sources of national power; the role of law, force, and diplomacy in world politics; problems of peace and disarmament; and international organization. Not taught as a writing intensive course. *(Fall, Spring, Summer)*

POLS 3030. Topics in Comparative or International Politics. (1-4) An intensive study of a topic in comparative or international politics. The particular topic investigated may vary from semester to semester, and a student may take more than one course under this number. *(On demand)*

POLS 3132. Comparative Public Policy. (3) Examination of the policy process and policy outcomes in the United States and other countries. Analyzes policy areas in depth to determine the role that variations in policy culture and political institutions play in shaping policy choices. Examines the possibility and limitations of transferring policy innovation from one polity to another. *(On demand)*

POLS 3133. Middle East Politics (3) Political development of Middle Eastern states from the period of European colonization to today. Topics include Arab nationalism, Islamism, the Palestinian-Israeli conflict, democratization, oil and economic development and regional security. (Yearly)

POLS 3135. Terrorism. (3) Addresses four basic questions: (1) What is terrorism? (2) Why does it occur? (3) How does terrorism network? (4) What are

the legal, political, and military coping strategies for terrorism? Emphasis on building an understanding of the nature and root causes of terrorism, and understanding the behavioral and psychological framework of terrorism and responses to it. *(Yearly)*

POLS 3141. European Politics. (3) Comparative analysis of selected European governments including Great Britain, France, Germany, and Italy. *(Yearly)*

POLS 3143. African Politics. (3) A comparative perspective on politics in sub-Saharan Africa and on the performance of post-independence political systems there in terms of national and international integration, economic challenges, and efforts to create stable and democratic civilian regimes. *(Yearly)*

POLS 3144. Latin American Politics. (3) Crosslisted as LTAM 3144. Comparative overview of political and socio-economic change in Latin America from the colonial period to the present. Primary emphasis on Latin American politics in the twentieth century, competing political ideologies, socio-economic issues, international political economy, and internal political change. *(Yearly)*

POLS 3148. Chinese Politics. (3) The origins, development, and maintenance of the Chinese political system. The organization and function of the Chinese Communist Party (CCP) and other political groups. The impact of tradition on contemporary Chinese politics. *(Yearly)*

POLS 3151. International Political Economy. (3) Crosslisted as INTL 3151. An analysis of the political dynamics of economic relationships among countries. Attention is focused on the political aspects of monetary, trade, and investment relationships, and the difficulties involved in coordinating policy and maintaining effective international management. *(Yearly)*

POLS 3152. International Organizations. (3) An analysis of the development and functions of formal and informal organizations that govern international politics and markets, including the United Nations system, economic and non-governmental organizations, and regional institutions. *(Yearly)*

POLS 3153. European Union. (3) An analysis of the European Union (EU) from historical, political, and economic perspectives. Emphasis on the institution's actors (especially states and interest groups) and policies of the EU as well as the changing relationship between the EU and its major trading partners such as the U.S. *(Yearly)*

POLS 3154. Cyberspace and Politics. (3) Examination of the advent of information technologies and digital communication in the global community and the impact of these changes on multi-level politics--international, regional, national, and sub-national. Four major themes are: exploration of the digital world, cyberspace governance and public policy, electronic government and virtual citizenship, and cyberspace expansion and global reach. Taught mainly as a web-based course. *(Yearly)*

POLS 3155. Latin American Political Economy. Crosslisted as LTAM 3154. Intersections of politics and economics in Latin America, focusing on the efforts to foster economic development in the region. Emphasis on post-World War II era. Includes issues such as debt management, dependency theory, impact of free market theories, and the power of labor movements. *(Yearly)*

POLS 3157. American Foreign and Defense Policy. (3) Examines constitutional provisions for foreign policy in the United States, analyzes the formulation and implementation of American foreign policy, and surveys key defense and security policy issues facing the United States. *(Yearly)*

POLS 3159. Diplomacy in a Changing World. (3) Crosslisted as INTL 3131. Diplomacy, a means to resolve disputes between sovereign states short of war, will be analyzed through case studies drawn from historical context and through a survey of contemporary crises. The American diplomatic process will also be reviewed with particular attention to how policy is shaped, how an embassy functions and how Americans train for the professional diplomatic service. *(Yearly)*

POLS 3162. International Law. (3) Historical and political analysis of the sources and development of international law. Particular attention is given to the role of modern international law in the relations of nation-states and its application to contemporary global problems. *(Yearly)*

POLS 3163. Introduction to Model United Nations. (3) (W) (O) Prerequisite: permission of the instructor. Preparation for and participation in the Model United Nations (simulation of the United Nations) for students who have not participated in this simulation previously. Includes study of the background of countries to be represented; the history, structure and procedures of the United Nations; drafting of resolutions and position papers; public speaking and caucusing; participation in regional MUN events. *(Spring)*

POLS 3164. U.S.-Latin American Relations. (3) Crosslisted as LTAM 3164. Addresses the always-complicated and often-conflictive relationship between Latin American and the United States. Particular attention to critical contemporary issues such as the drug trade, immigration, international trade, humanitarian aid and U.S. policy toward Cuba. *(Yearly)*

POLS 3165. East Asia in World Affairs. (3) Examines the political factors governing diplomatic relations, national order, economic trade, and national security in East Asia. Emphasis on China, Taiwan, Hong Kong, Japan, the Korean peninsula, and the Philippines. *(Yearly)*

POLS 3166. Politics of the Islamic World. (3) Political development of and current political trends within countries of North and East Africa, the Middle East, Central Asia, and South and Southeast Asia that make

up the Islamic World. Topics include the diverse body of Islamic political thought, manifestation of Islamic political thought in contemporary countries and movements, a discussion of how Islamic societies handle diversity and the issue of democratic rule, and the political development of the growing Muslim minority community in the West.

POLS 3169. Foreign Policy of African States. (3) Crosslisted as AFRS 4105. Prerequisite: any upper-division course on Africa. A theoretical approach to the study of external and internal factors influencing the development, implementation, and conduct of foreign policy of African states. (*Spring*)

POLS 4163. Advanced Model United Nations. (3) (W) (O) Prerequisite: POLS 3163, or the equivalent and permission of the instructor. Preparation for and participation in the Model United Nations (simulation of the United Nations) for students who have completed POLS 3163 or the equivalent. Includes study of the background of countries to be represented; the history, structure and procedures of the United Nations; drafting of resolutions and position papers; public speaking and caucusing; participation in international MUN events. May be repeated for credit. *(Spring)*

Political and Legal Philosophy

POLS 1170. Introduction to Political Philosophy. (3) Crosslisted as PHIL 2165. Survey course that includes an introduction to recognized major political thinkers such as Plato, Aristotle, Hobbes, Locke, Rousseau, and Marx. Included are other politically influential writers such as Confucius, Mary Wollstonecraft, and Martin Luther King. *(Fall, Spring)*

POLS 3070. Topics in Political or Legal Philosophy. (3) Analysis of a selected problem in contemporary political philosophy, legal philosophy, or in the history of political philosophy. Includes moral and ethical evaluation of political and social practices and institutions. Readings from classic texts or contemporary works. Topic for consideration changes from semester to semester. Course may be repeated with permission of instructor. (*On demand*)

POLS 3171. History of Classical Political Philosophy. (3) Major concepts and systems of political philosophy of Ancient Greece and Rome. *(Fall)*

POLS 3172. African-American Political Philosophy. (3) Crosslisted as AFRS 3179. Prerequisite: 3000 level course on Africa from AFRS, HIST, or POLS. Major competing ideologies in African-American political philosophy. *(On demand)*

POLS 3173. History of Modern Political Philosophy. (3) Major concepts and systems of western political philosophy from the 16th-19th century. *(Spring)*

POLS 3175. Philosophy of Law. (3) Philosophy underlying the legal system and the Anglo-American practice of law. Will usually include topics such as what is "law," obligation to obey the law, liberty, privacy and tolerance, and criminal responsibility and punishment. *(Yearly)*

POLS 3177. Social and Political Philosophy. (3) Crosslisted as PHIL 3226. Philosophical concepts involved in understanding and evaluating the basic structure of societies (e.g., economic, educational, legal, motivational, and political) including equality, fraternity, freedom, and rights. Relevance to contemporary social and political issues stressed. Readings from classical and contemporary sources. (*On demand*)

POLS 3250. Political Sociology. (3) Crosslisted as SOCY 3250. Prerequisite: SOCY 1101. Sociological analysis of the relationship between social, economic and political systems. Focuses on power relations in society and its effects on the distribution of scarce resources. Topics covered may include: theories of power and the nation state, political participation and voting, religion and politics, the comparative welfare state, media and ideology, the global economy, war and genocide, revolutions, and social movements. Not open to students who have credit for SOCY 3251 or POLS 3251. *(Yearly)*

POLS 3251. Political Sociology. (3) (O) Crosslisted as SOCY 3251. Prerequisite: SOCY 1101. Sociological analysis of the relationship between social, economic and political systems. Focuses on power relations in society and its effects on the distribution of scarce resources. Topics covered may include: theories of power and the nation state, political participation and voting, religion and politics, the comparative welfare state, media and ideology, the global economy, war and genocide, revolutions, and social movements. Not open to students who have credit for SOCY 3250 or POLS 3250. *(Yearly)*

Research and Practice of Political Science

POLS 2220. Political Science Methods. (4) (W) Prerequisite: at least one introductory Political Science course. This course builds the knowledge skills ability (KSA) of students, in other words increases their information literacy. Emphasis on how to do literature searches, write professional papers as political scientists, and manipulate data with computer statistical packages. Restricted to Political Science majors. Recommended to be take before majors begin to take upper level courses. Three hours of lecture and one hours of computer laboratory per week. *(Fall, Spring)*

POLS 4400. Internship in Political Science. (3-6) Prerequisite: Permission of the department. Practical experience in politics by working for a party, campaign organization, political office holder, news medium, government agency, or other political organization. Minimum of 150 working hours for three hours credit; minimum of 300 working hours for six hours credit. No more than six credits may be received through this course. (*Pass/No Credit*) (*Fall, Spring, Summer*)

POLS 4600. Senior Seminar. (3) (O, W) Prerequisite: POLS 1110, POLS 1130, POLS 1150, and POLS 2220. Capstone course for majors only. Seminar style

exploration of a selected topic in the discipline. Includes writing a research paper and presenting the results to the class. *(Fall, Spring)*

POLS 4800. Independent Study. (1-3) Prerequisite: Permission of the instructor. Supervised investigation of a political problem that is (1) of special interest to the student; (2) within the area of the instructor's special competence; and (3) normally an extension of previous coursework with the instructor. A student may take more than one course under this number but not more than three hours a semester. (*Fall, Spring, Summer*)

POLS 4990. Senior Thesis. (3) (W) Prerequisite: POLS 2220. The student completes an article-length research paper under the supervision of a member of the faculty. The paper must involve quantitative or other methods of modern political analysis. Restricted to majors. (*Fall, Spring, Summer)*

PORTUGUESE (PORT)

PORT 1201. Elementary Portuguese I. (3) Fundamentals of the Portuguese language, including speaking, listening comprehension, reading, and writing. (*Fall*)

PORT 1202. Elementary Portuguese II. (3) Prerequisite: PORT 1201 or permission of the Department. Fundamentals of the Portuguese language, including speaking, listening comprehension, reading, and writing. (*Spring*)

PORT 2201. Intermediate Portuguese I. (3) Prerequisite: PORT 1202 or permission of the Department. Review of grammar, with conversation and composition. (*Fall*)

PORT 2202. Intermediate Portuguese II. (3) Prerequisite: PORT 2201 or permission of the Department. Continued review of grammar, conversation, and composition. (*Spring*)

PSYCHOLOGY (PSYC)

PSYC 1101. General Psychology. (3) A survey of the field including such topics as learning, emotions, motivation, personality, psychological testing, and abnormal behavior. Emphasis on psychology as a behavioral science. May be taken with or without the lab. All psychology majors and those who wish to apply this course as partial fulfillment of the University science and technology requirement must take PSYC 1101L during the same semester in which they take PSYC 1101. (*Fall, Spring, Summer) (Evenings*)

PSYC 1101L. General Psychology Laboratory. (1) An introduction to laboratory equipment and procedures. Meets two hours per week. (May not be taken apart from the lecture portion of PSYC 1101 except by psychology majors and minors with permission of the Department.) (*Fall, Spring, Summer) (Evenings*)

PSYC 2102. Research Methodology. (4) (W) Prerequisites: PSYC 1101 and 1101L, and STAT 1222. Experimental, observational, and correlational methods of psychological research. Basic concepts of philosophy of science will also be discussed. Emphasis on methodology rather than content and applicability of methods to current topics in psychology. Three lecture hours and one two-hour laboratory period a week. (*Fall, Spring*) *(Evenings)*

PSYC 2112. Introduction to Behavior Modification. (4) Prerequisite: PSYC 1101. Methods and constructs of behavior modification, including the application of the methods to laboratory research. Three lecture hours and one two-hour laboratory period a week. *(On demand)*

PSYC 2120. Child Psychology. (3) Prerequisite: PSYC 1101. Psychological development in infancy and childhood, including such topics as biological change, learning, thought, language, social relations, intelligence, and morality. (*Fall, Spring, Summer*)

PSYC 2121. Adolescent Psychology. (3) Prerequisite: PSYC 1101. Developmental and psychological characteristics of adolescents, with emphasis on the developmental transitions, social contexts, and problems of adolescence. *(Fall, Spring)*

PSYC 2124. Psychology of Adult Development and Aging. (3) Crosslisted as GRNT 2124. Psychological development through adulthood and old age. Emphasis on processes underlying continuity and change in adulthood, including personality and socialization, cognitive development, and the psychophysiology of aging. *(Yearly)*

PSYC 2150. Psychology of Adjustment. (3) Prerequisite: PSYC 1101. The study of the process of adjustment and factors that may influence adaptation. Consideration is given to psychological reactions to critical problems encountered in modern life. Introduction to different approaches to intervention and treatment. (*Fall, Spring*)

PSYC 2160. Introduction to Health Psychology. (3) Prerequisite: PSYC 1101. An introduction to the contributions of the discipline of psychology to the promotion and maintenance of health, the prevention and treatment of illness, and the improvement of the health care system. Topics include the role of stress and physiological factors in illness, chronic pain disorders and pain management, lifestyle and psychosocial influences on health, and the influence of illness of interpersonal relationships. *(Fall, Spring)*

PSYC 2171. Introduction to Industrial/Organizational Psychology. (3) The study of people at work; what motivates people to work and what leads to satisfaction, alienation, or performance; how to lead others; the structure of an organization and processes of communication, decision making, and conflict; socialization through selection and training; measurement of individual contributions; the design of work itself; ways to change; and develop entire organizations. (*Fall, Spring*)

PSYC 3001. Topics in Psychology. (3) Prerequisite: Permission of the instructor. Examination of special psychological topics. May be repeated for credit as topics vary.

PSYC 3103. History and Systems of Psychology. (3) Prerequisite: PSYC 1101. Historical antecedents and origins of modern psychology. Emphasis on influential psychological systems such as behaviorism and psychoanalysis. (*Fall, Spring, Summer)*

PSYC 3110. Comparative Psychology. (3) Prerequisite: PSYC 1101. Animal and human behavior from a comparative point of view. Includes the study of methodology, and classification of behavior patterns, as well as the origin of these patterns. (*Yearly*)

PSYC 3111. Psychology of Learning. (3) Prerequisite: PSYC 1101. (Completion of PSYC 2102 is strongly recommended.) Major theories and empirical findings in the area of learning. (*Yearly)*

PSYC 3113. Physiological Psychology. (3) Prerequisite: PSYC 1101. The relationship of physiological systems to integrated behavior and an introduction to brain-behavior relationships. Emphasis on neural regulation of behavior. (*Fall, Spring, Summer*)

PSYC 3114. Motivation. (3) Prerequisite: PSYC 1101. Current theories and research in the area of motivation. Consideration is given to the role of emotion in human motives. (*Yearly*)

PSYC 3115. Sensation and Perception. (3) Prerequisite: PSYC 1101. An introduction to the sensory and perceptual processes that provide the means to experience and make sense of the physical world in which we live. Topics include discussions of how sensory data are acquired, processed, and interpreted. (*Yearly*)

PSYC 3116. Human Cognitive Processes. (3) Prerequisite: PSYC 1101. Processes involved in such complex human behaviors as language (acquisition and usage), memory, and problem solving, with emphasis upon experimental findings and current theories. (*Fall, Spring*)

PSYC 3117. Hereditary Behavior. (3) Prerequisite: PSYC 1101. Genetic and environmental contributions to behavior and psychological processes. History of the nature-nurture issue in psychology; animal and human research methods; statistical analysis of behavior-genetic data; and the heritability of learning ability, intelligence, personality, and psychopathology. (*Yearly*)

PSYC 3118. Research Methods in Physiological Psychology. (4) Prerequisites: PSYC 1101 and permission of the instructor. Current laboratory techniques in physiological psychology, including basic surgeries, lesioning, stimulation, recording, and histology. Three lecture hours and one two-hour laboratory period a week. (*On demand*)

PSYC 3122. Cognitive and Language Development. (3) Prerequisites: PSYC 1101 and 2120. Theory and research on the development of thought and language in children, including such topics as theories of cognitive development, the development of perception, representation of knowledge, memory, language, and problem solving. (*Alternate years*)

PSYC 3123. Social and Personality Development. (3) Prerequisites: PSYC 1101 and 2120. Social and personality development of children, including such topics as infant social behavior, socialization practices, independence and achievement, aggression, sex-role development, and moral development. (*Alternate years*)

PSYC 3125. Older Worker and Retirement. (3) (W) Prerequisite: Permission of the instructor. Physical characteristics, personal attitudes, and structural factors affecting the employment of persons over 40. Topics include biological aging, myths and stereotypes about older workers, public policies, human resources practices, economics of retirement, and theories about career and life stages. *(Alternate years)*

PSYC 3126. Psychology of Women. (3) Crosslisted as WMST 3226. Prerequisite: PSYC 1101. Application of research in developmental, experimental, and clinical psychology to issues regarding women and gender. Includes such topics as gender-role development, gender differences in cognitive abilities and performance, psychological perspectives on women's physical and mental health, and violence toward women. *(Spring)*

PSYC 3130. Social Psychology. (3) Prerequisite: PSYC 1101. The social behavior of individuals. Topics include interpersonal attraction and relationship development; attitude change; social conflict; social interaction; social perception; and social influence processes; general theories of social behavior; and research approaches. (*Fall, Spring*)

PSYC 3135. Psychology of Personality. (3) Prerequisite: PSYC 1101. Current personality theories. Consideration given to psychoanalytic, physiological, trait and factor, the perceptual viewpoints in the light of contemporary research. (*Fall, Spring, Summer*)

PSYC 3140. Basic Processes in Psychological Assessment. (3) Prerequisites: PSYC 1101 and 1101L, and STAT 1222; PSYC 2102 recommended. Psychological testing, including scaling procedures, reliability and validity, correlational techniques used in test construction, a review of various kinds of psychological tests, and basic approaches to test interpretation. (*Yearly*)

PSYC 3151. Abnormal Psychology. (3) Prerequisite: PSYC 1101. A history of psychopathology. Case studies, differential diagnosis, psychological dynamics of abnormal behavior, including theoretical, clinical, and experimental contributions in the field. (*Fall, Spring, Summer*)

PSYC 3152. Child Psychopathology. (3) Prerequisites: PSYC 1101, 2120 and 3151. Principles of classification, assessment and treatment of children and adolescents who display deviant affective, cognitive, and social behavior. (*Alternate years*)

PSYC 3155. Community Psychology. (3) Social forces, particularly within the context of organizations and/or communities, that affect the development of psychopathology and/or personal competency, with emphasis on preventing psychopathology and increasing competency. Topics include the concept of prevention; assessment of organizations, communities, and other environments; methods of instituting organizational and community change; evaluating the effects of community interventions; social policy analysis; and ethical issues involved in community work. (*Yearly*)

PSYC 3172. Psychology of Personnel: Employee Selection and Classification. (3) Prerequisite: PSYC 2171 or permission of instructor. Methods, techniques, and procedures used to select and classify employees. (*Fall*)

PSYC 3173. Psychological Bases of Training Programs. (3) Prerequisites: PSYC 1101 and 2171, or permission of instructor. Application of alternative theories about adult learning to the development and conduct of training programs in industry. Topics include how to develop training needs, a description of methods available to trainers such as programmed instruction and sensitivity training, and how to evaluate the effects of various training techniques. (*Spring*)

PSYC 3174. Organizational Psychology. (3) Prerequisite: PSYC 2171. Application of psychological principles to group and organizational levels of analysis, with emphasis on work teams and business organizations. Topics include group dynamics, teams and empowerment, organizational culture and diversity, and organization development and change. *(Spring and Some Summers)*

PSYC 3216. Introduction to Cognitive Science (3) Crosslisted as ITCS 3216. Prerequisite: Permission of the Department. Interdisciplinary introduction to the science of the mind. Broad coverage of such topics as philosophy of mind; human memory processes; reasoning and problem solving; artificial intelligence; language processing (human and machine); neural structures and processes; and vision. *(Spring, Alternate years)*

PSYC 3313. Neuropsychology. (3) Prerequisite: PSYC 3113 or equivalent. Brain function and behavior, especially in individuals believed to be brain damaged (e.g., by stroke, Alzheimer's, or head injury); general principles of brain function and of human neuropsychology, including higher functions (e.g., memory and language); and neuropsychological assessment. *(Yearly)*

PSYC 3316. Cognitive Neuroscience. (3) Prerequisite: PSYC 3113 or 3116 or equivalent. Biological basis of consciousness and the neurobiology of mental processes by which we perceive, act, learn, and remember; representation of mental processes from electrophysiological and brain imaging techniques, clinical neurology, and computational science. *(Yearly)*

PSYC 3405. Practicum in Applied Psychology. (1-4) Prerequisites: junior standing, permission of the instructor, and the Psychology Department. Work in practical settings related to psychology under the supervision of a faculty member. May be repeated for credit with departmental permission. The student must have obtained approval in the semester preceding the semester in which the practicum is to be taken. Offered only on a *Pass/No Credit* basis. (*Fall, Spring*)

PSYC 3790. Honors Thesis I. (3) Prerequisite: Permission of instructor. Initiation of independent Honors research, including the preparation and defense of a formal thesis proposal. *(Fall, Spring, Summer)*

PSYC 3791. Honors Thesis II. (3) Prerequisite: PSYC 3790. Completion of independent Honors research, including the preparation and defense of a formal Honors thesis. *(Fall, Spring, Summer)*

PSYC 3806. Individual Studies in Psychology. (1-4) Prerequisites: permission of the instructor and the Department. Directed individual study that may take the form of initiating, designing and conducting an original research problem, or a critique and synthesis of existing research. May be repeated for credit. The student must have obtained approval in the semester preceding the semester in which the course is to be taken. (*Fall, Spring, Summer*)

PSYC 4006. Selected Topics in Psychology. (3) Prerequisite: junior or senior standing. Examination of special psychological topics. (*On demand*)

PSYC 4140. Tests and Measurements. (3) Prerequisite: PSYC 1101. Psychological and educational measurements in current use with emphasis on structure, administration and application of group tests. Individual tests such as Stanford-Binet, WISC and WAIS will be reviewed. (*On demand*)

PSYC 4152. Psychology of Exceptional Children. (3) Assessing and treating the exceptional child. Emphasis on current research in several diagnostic categories, including the emotionally disturbed, learning disabled, mentally retarded, physically handicapped and gifted. *(On demand)*

PSYC 4612. Seminar in Behavior Modification. (3) Prerequisites: PSYC 2102, 2112 and 3112. Current issues in behavior modification, including an integration of principles, techniques and practical experiences. Emphasizes development of written and oral communication skills. (*On demand*)

PSYC 4613. Seminar in Physiological Psychology. (3) (W) (O) Prerequisites: PSYC 2102 with a grade of C or better and permission of the department. PSYC 3113 or equivalent recommended. Intensive study of selected topics in physiological psychology, such as

psychopharmacology, biofeedback and self-regulation, and sleeping and waking. Emphasizes development of written and oral communication skills. (*Yearly*)

PSYC 4619. Seminar in Experimental Psychology. (3) (W) (O) Prerequisites: PSYC 2102 with a grade of C or better and permission of the department. In-depth examination of an area of current concern in the psychological laboratory. Each semester will have a different focus such as discrimination, learning, memory, experimental analysis of behavior and attention. Emphasizes development of written and oral communication skills. (*Yearly*)

PSYC 4625. Seminar in Developmental Psychology. (3) (W) (O) Prerequisites: PSYC 2102 with a grade of C or better permission of the department, and either 2120, 2121, or 2124. Concentrated examination of selected current issues and research in a field of developmental psychology. Emphasizes development of written and oral communication skills. (*Yearly*)

PSYC 4630. Seminar in Social Psychology. (3) (W) (O) Prerequisites: PSYC 2102 with a grade of C or better, PSYC 3130, and permission of the department. Intensive study at the advanced level of topics of current research and theoretical interest in social psychology. Emphasizes development of written and oral communication skills. (*Yearly*)

PSYC 4650. Seminar in Human Adaptation and Behavior. (3) (W) (O) Prerequisites: PSYC 2102 with a grade of C or better, and permission of the department. Intensive reading and discussion in selected areas of psychology, such as stress, personality, emotions and psychopathology. Emphasizes development of written and oral communication skills. (*Yearly*)

PSYC 4655. Seminar in Community Psychology. (3) (W) (O) Prerequisites: PSYC 2102 with a grade of C or better, 2150, 3151, and permission of the department. Application of psychological research findings to specific problems in the community with emphasis on problems hypothesized directly to affect psychological well-being. Emphasizes development of written and oral communication skills. (*Yearly*)

PSYC 4660. Seminar in Health Psychology. (3) (W) (O) Prerequisite: PSYC 2102 with a grade of C or better, and permission of the department. Detailed examination of issues relevant to health and behavior. Readings and discussion of health-related concepts and controversies current in the professional literature. Emphasizes development of written and oral communication skills. *(Yearly)*

PSYC 4670. Seminar in Industrial Psychology. (3) (W) (O) Prerequisites: PSYC 2102 with a grade of C or better, 2171, and permission of department. Topics of current concern in industrial/organizational psychology and related disciplines including issues that affect individuals at work and organizations in society. Emphasizes development of written and oral communication skills. (*Yearly*)

READING (READ)

READ 3224. Teaching Reading to Primary Level Learners. (3) (W) Prerequisite: Admission to Teacher Education. Research, theory, and instructional practice related to the reading process and reading instruction in the elementary school with a focus on assessment of emergent reading behaviors; language development and reading; phonics and phonemic awareness; balanced literacy; and meeting the needs of diverse learners. Includes an extensive field-based component. *(Fall, Spring)*

READ 3226. Teaching Reading to Intermediate Grade Learners. (3) (W) Prerequisite: Admission to Teacher Education. Research, theory, and instructional practice related to integrating the communication processes with all subject areas, vocabulary, comprehension, study skills, authentic, assessment-based instruction, addressing the needs of diverse and struggling readers. Includes an extensive, field-based component. *(Fall, Spring)*

READ 3255. Integrating Reading and Writing Across Content Area. (3) (W) Prerequisite: Admission to Teacher Education. Theories, research, and instructional methods, associated with reading and writing in the content areas of the middle and secondary school curriculum. Includes an extensive field-based component. *(Fall, Spring)*

RELIGIOUS STUDIES (RELS)

RELS 1101. An Introduction to Religious Studies. (3) (W) An introduction to the study of the religious dimensions of human existence. (*Fall, Spring, Summer) (Evenings*)

RELS 1120. The Bible and its Interpreters. (3) An introduction to the history of biblical interpretation from the pre-canonical era to the present. *(Yearly)*

RELS 2000. Topics in Religious Studies. (1-3) Credit hours vary with topics. Special topics in Religious Studies. May be repeated for credit as topics vary. *(On demand)*

RELS 2101. Introduction to Western Religions. (3) An introduction to Judaism, Christianity, Islam and other selected religions. Emphasis on the myths, stories, symbols, rituals, ideas, and ethical practices of these religions in their classical formulations and in their contemporary practices. (*Fall, Spring) (Evenings*)

RELS 2102. Introduction to Asian Religions. (3) An introduction to Hinduism, Buddhism, and other selected religions such as Confucianism, Daoism, and Islam. Emphasis on the myths, stories, symbols, rituals, ideas, and ethical practices of these religions in their classical formulations and in their contemporary practices. *(Fall, Spring, Summer) (Evenings*)

RELS 2104. Hebrew Scriptures/Old Testament. (3) The Hebrew religious tradition from the perspective of its development in the culture of the ancient Near East. (*Yearly*)

RELS 2105. New Testament and Christian Origins. (3) Emergence of Christianity in its cultural context. Analysis of selected early Christian writings in English translation. (*Fall, Spring*)

RELS 2108. Religion in American Culture. (3) The role of religion in the shaping of American culture. (*Fall, Spring*)

RELS 2110. Judaism. (3) The development of Jewish religious thought from antiquity to the present. (*Yearly*)

RELS 2120. Christianity. (3) The world-wide development of the thought and practices of diverse Christian traditions from antiquity to the present. *(Yearly)*

RELS 2131. Islam. (3) The development of the traditions in Islam with emphasis on Islamic culture, literature, and mysticism. (*Yearly*)

RELS 2137. Contemporary African-American Religions. (3) African-American religion since World War II. Emphasis on the influence of religion and religious leaders in the struggle for a Black humanity. (*Alternate years*)

RELS 2154. Hinduism. (3) The ancient Vedic traditions and the development of Hinduism. Emphasis is on the role of Hinduism in Indian civilization. (*Alternate years*)

RELS 2157. Buddhism. (3) The historical development of Buddhism with special attention given to its diverse manifestations in South Asia. (*On demand*)

RELS 2166. Taoism. (3) Philosophical Taoism as nature mysticism. Comparison with nature mystics in the West. (*Alternate years*)

RELS 2216. The Modern Middle East. (3) Crosslisted as HIST 2216. An introduction to the history of this important and dynamic region. The course focuses on the issues that have defined the Middle East in the recent past and provides students with the historical context needed to understand the region, its peoples, and its conflicts in greater depth. *(Fall)*

RELS 2600. Approaches to the Study of Religion. (3) (W) Required of all majors as early in their program as possible. Examines basic concepts, theories, and approaches that are involved in the critical, academic study of religion. Attention given to basic research materials and to standard writing practices in the discipline. Majors only. *(Fall, Spring)*

RELS 3000. Topics in Religious Studies. (3) Treatment of a special topic in religious studies. May be repeated for credit as topics vary. Same as RELS 3001, but **does not** fulfill the general education writing goal. *(On demand)*

RELS 3001. Topics in Religious Studies – Writing Intensive. (3) (W) Treatment of a special topic in religious studies. May be repeated for credit as topics vary. Same as RELS 3001, but fulfills the general education writing goal. *(On demand)*

RELS 3050. Topics in Religion and Modern Culture. (3) Treatment of a special topic in religion and modern culture. May be repeated for credit as topics vary. *(Yearly)*

RELS 3101. Greek Myths and Religions. (3) The gods and goddesses, heroes and heroines in ancient Greek myths and religions; Greek myth and later Western religions; polytheism and monotheism; functions of myth; and contemporary interpretations of Greek myth. (*Yearly*)

RELS 3104. Prophecy and Prophetic Literature in Ancient Israel. (3) Prerequisite: RELS 2104 or permission of the instructor. An examination of the phenomenon of prophecy in the religion of ancient Israel, with particular attention devoted to the writings about and writings attributed to named prophets in the Hebrew Bible. *(On demand)*

RELS 3107. The Psalms and Wisdom Literature of Israel. (3) Prerequisite: RELS 2104 or permission of the instructor. The origin and content of the Psalms and the place of wisdom literature in the development of Hebrew thought. *(On demand)*

RELS 3111. Women in Judaism. (3) Crosslisted as WMST 3111. A survey of the roles and activities in Jewish women throughout Jewish history, as it is portrayed in a diverse sampling of Jewish religious literature and practice. *(Alternate years)*

RELS 3113. Jesus. (3) Recommended: RELS 2105. Jesus and the religion he taught from the point of view of the synoptic gospels. *(Alternate years)*

RELS 3116. Paul. (3) The writings of St. Paul. The occasion, purpose and significance of each letter for the emerging Christian community. (*Alternate years*)

RELS 3122. Esoteric Traditions. (3) The study of one or more particular expressions of religious esotericism (e.g., Jewish Kabbalah; Hindu Tantra; etc.). May be repeated for credit when the subject matter changes. *(On demand)*

RELS 3129. Christian Controversies. (3) An exploration of Christian responses to ethical, cultural, political, and theological conflicts. The issues are selected to represent a range of time periods in the history of various Christian traditions. *(Alternate years)*

RELS 3135. Religion in Nineteenth-Century America. (3) Examination of religious thought, practices, and movements in 19th-century America. (*On demand*)

RELS 3150. The Black Church/Civil Rights Movement. (3) Crosslisted as AFRS 3150. Role of the black

church in the struggle for human equality. Topics such as radical, moderate, and accommodationist leadership styles; historical development of the black church in the South; and its emergence as a foundation for modern civil rights movement. (*Fall*)

RELS 3163. The Religious Art and Architecture of India. (3) The visual art of Hindus, Buddhists, Jainas, and Muslims in the architecture, paintings, and sculptures of India. (*Yearly*)

RELS 3169. Zen Buddhism. (3) Buddhist origins in India, development of the Ch'an (Zen) school in China and Japan, and emphasis on the formative influences of Zen on Japanese art and culture. (*Alternate years*)

RELS 3209. Quest in Literature. (3) The spiritual dimension of contemporary and traditional literature. Focus may be on an artist, genre (novel, poetry, drama), or theme. *(On demand)*

RELS 3212. Films and Identity. (3) (W) Themes of religious identity, alienation, search, discovery, sexuality and death as reflected in recent American movies and foreign films. Film laboratory required. (*On demand*)

RELS 3242. Philosophy of Religion. (3) Crosslisted as PHIL 3242. Philosophical implications of religious experience, including the definitions, development, and diverse forms of the problems of belief and reason in modern thought. (*On demand*)

RELS 3400. Applied Research/Field Work. (3) Prerequisite: major or minor in Religious Studies, 9 earned hours in religious studies, and permission of the instructor. Research and in-service training in business or community-based organizations. Specific content based on contract between student, supervising professor and cooperating organization. *(Approximately 120 contact hours for the semester) (On demand)*

RELS 3450. Study Abroad for Religious Studies Majors. (3-6) Prerequisite: Permission of the department. The examination of an approved topic in the context of study abroad. *(On demand)*

RELS 4000. Topics in Religious Studies. (3) Prerequisite: Permission of the instructor. May be repeated for credit. *(On demand)*

RELS 4010. Major Figure in Religious Studies. (3) (W) The life and works of a major figure who has contributed to religious studies. May be repeated for credit for different figures. *(On demand)*

RELS 4050. Topics in Religion and Modern Culture. (3) Treatment of a special topic in religion and modern culture. May be repeated for credit as topics vary. *(Yearly)*

RELS 4101. Religion and Modern Thought. (3) The interaction of modern thought and modern religious sensibilities. (*Alternate years*)

RELS 4107. Early Judaism. (3) Prerequisite: RELS 2104 or 2105 or 3110 or permission of the instructor. Comparative historical and literary study of the varieties of Judaism evidenced during late antiquity (circa 70-640 C.E.), with special attention devoted to the information and development of rabbinic Judaism. *(On demand)*

RELS 4108. Medieval Judaism. (3) Prerequisite: RELS 2104 or 3110 or permission of the instructor. Comparative historical and literary study of the varieties of Judaism evidenced in Western Europe, the Byzantine Empire, and Islamicate realms from approximately 640 C.E. to approximately 1492 C.E. *(On demand)*

RELS 4109. Modern Judaism. (3) Prerequisites: RELS 3110 or 4107 or 4108 or permission of the instructor. Historical and conceptual study of Judaism and Jewish experience in Europe, America, and Israel, from the 16th century to the present, with special attention paid to the development of denominations, Zionism, and the Holocaust. *(On demand)*

RELS 4110. Contemporary Jewish Thought. (3) An examination of philosophy, religion, morality, politics, sociality, culture, family, and self-identity, in the light of modern and recent Jewish thought. *(Alternate years)*

RELS 4121. Medieval and Reformation Christianity. (3) An examination of Christian thought and practice from the early Middle Ages (c. 500 CE) through the reformations of the sixteenth century. *(Alternate years)*

RELS 4127. Material Christianity. (3) An examination of the ways individuals and groups throughout the Christian tradition have invested material objects with sanctity and power. Much of the course will be devoted to exploring theoretical models and theological warrants for practices related to objects. *(Alternate years)*

RELS 4201. Religion, Morality, and Justice. (3) Explore the ethical and social dimensions of selected religious traditions in their cultural contexts. *(On demand)*

RELS 4600. Senior Seminar. (3) (W) (O) Required of majors in final year of studies. (*Fall, Spring*)

RELS 4800. Independent Studies. (1-3) Prerequisite: permission of the instructor. May be repeated for credit. (*Fall, Spring*)

RUSSIAN (RUSS)

RUSS 1201. Elementary Russian I. (4) Fundamentals of the Russian language, including speaking, listening comprehension, reading, and writing. (*Fall*)

RUSS 1202. Elementary Russian II. (4) Prerequisite: RUSS 1201. Fundamentals of the Russian language, including speaking, listening comprehension, reading, and writing. (*Spring*)

RUSS 2201. Intermediate Russian I. (4) Prerequisite:

RUSS 1202 or permission of the Department. Review of grammar, with conversation and composition based upon readings in Russian culture and civilization. (*Fall*)

RUSS 2202. Intermediate Russian II. (4) Prerequisite: RUSS 2201 or permission of the Department. Continuation of grammar, conversation, and composition skills, based on readings in Russian literature. (*Spring*)

RUSS 3050. Masterpieces of Russian Literature. (3) (W) Prerequisite: sophomore standing. Conducted in English. No knowledge of Russian required. May be repeated as topic changes. (*On demand*)

RUSS 3201. Advanced Russian Grammar, Composition, and Conversation I. (3) Prerequisite: RUSS 2202 or permission of the Department. Intensive review of Russian grammar, plus mastery of new grammatical structures, while performing written and oral task-oriented activities. Acquisition of new vocabulary in a cultural context. *(Fall)*

RUSS 3202. Advanced Russian Grammar, Composition and Conversation II. (3) Prerequisite: RUSS 3201 or permission of the Department. Intensive practice of Russian grammar, speaking, and writing. Additional Russian civilization and culture as students improve their language skills. *(Spring)*

RUSS 3203. Russian Civilization and Culture. (3) (W) Conducted in English. No knowledge of Russian required. Geographical, historical, and artistic features of Russian culture, as well as aspects of life, thought, behavior, attitudes, and customs of the Russian-speaking people. Lectures, discussions, and viewing of films. (*On demand*)

RUSS 3800. Directed Individual Study. (1-4) Prerequisite: RUSS 3202 or permission of the Department. To be arranged with the instructor. May be repeated for credit. (*On demand*)

SECONDARY EDUCATION (SECD)

SECD 3140. The Adolescent Learner. (3) Characteristics of the adolescent learner, including the impact on the classroom of physical, social, cognitive, moral, vocational, and affective developmental factors and multicultural issues. Field-based activities include observation and tutoring in school and non-school settings; 15 hours of field experiences. *(Fall, Spring)*

SECD 3141. Secondary Schools. (3) Prerequisite: admission to Teacher Education. Overview of secondary education with emphasis on the foundational components and instructional programs appropriate for contemporary adolescents in American society. Includes 15 hours of field experiences. *(Fall, Spring)*

SECD 3142. Issues in Secondary Education. (2) Prerequisite: admission to Teacher Education. Corequisites: EDUC 4290 and a content methods course. Integration of preservice education and academic concentration course work in a pre-student-teaching field experience. Students choose from sections of the course that focus on a contextual issue of particular interest while working in a setting where the issue exists. Students may take as many different Issues sections as their schedules permit. Includes 30 hours of field experiences. *(On demand)*

SECD 3800. Individual Study in Secondary Education. (1-6) Prerequisite: permission of the student's advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. *(Fall, Spring, Summer)*

SECD 4441. Student Teaching/Seminar: 9-12 Secondary Science. (15) Prerequisite: completion of all coursework and approval of an Application to Student Teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved secondary school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in an appropriate grade-level setting. Approximately 35-40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

SECD 4442. Student Teaching/Seminar: 9-12 Secondary Mathematics. (15) Prerequisite: completion of all coursework and approval of an Application to Student Teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved secondary school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in a appropriate grade-level setting. Approximately 35-40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

SECD 4443. Student Teaching/Seminar: 9-12 Secondary Social Studies. (15) Prerequisite: completion of all coursework and approval of an Application to Student Teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved secondary school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in an appropriate grade-level setting. Approximately 35-40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

SECD 4444. Student Teaching/Seminar: 9-12 Secondary English. (15) Prerequisite: completion of all coursework and approval of an Application to Student Teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved secondary school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching

field in an appropriate grade-level setting. Approximately 35-40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

SECD 4472. Secondary Education Clinical Experience. (3) Program of learning activities in the student's area of academic concentration in an approved school setting. *(On demand)*

SOCIOLOGY (SOCY)

SOCY 1101. Introduction to Sociology. (3) The sociological perspective and process; fundamental concepts, principles, and procedures. (*Fall, Spring, Summer) (Evenings*)

SOCY 2100. Aging and the Lifecourse. (3) Crosslisted as GRNT 2100. An interdisciplinary curse that examines the phenomenon of aging and its consequences for society from a variety of perspectives. Students participate in lectures, discussions and service learning projects designed to give them a broad overview of the field of gerontology. Emphasis on the wide variation in the aging process and approaches to meeting the needs of the aging population. *(Annually)*

SOCY 2112. Popular Culture. (3) Analysis of popular forms of everyday life in America: fashions, fads, entertainment trends, advertising, television programming, music, myths, stereotypes, and icons of mass-mediated culture. (*Fall, Spring*)

SOCY 2126. World Population Problems. (3) (W) Crosslisted as ANTH 2126. Prerequisites: None. An examination of various world population "problems," such as growth, migration, fertility, and population aging, in order to learn how cultural, political, economic, and environmental factors influence and are influenced by the population structure of a given society. *(Alternate years)*

SOCY 2132. Sociology of Marriage and the Family. (3) Cross-cultural examination of family; socialization and sex roles; love, dating, and mate selection; communication; sexuality; power and decision making; parenthood; childlessness; conflict and violence; divorce, remarriage, and stepfamilies; alternate lifestyles; and future family. (*Fall, Spring, Summer)*

SOCY 2133. Sociology of Marriage and Family – Writing Intensive. (3) (W) Cross-Cultural examination of family; socialization and sex roles; love, dating, and mate selection; communication; sexuality; power and decision making; parenthood; childlessness; conflict and violence; divorce, remarriage, and stepfamilies; alternative lifestyles; and future family. *(On demand)*

SOCY 2163. Sociology of Gender. (3) (W) Changing patterns of gender inequality; socialization and social structure as basis of gendered behavior, ideologies, and relationships. Alternative gender models and social movements as vehicles to diminishing gender inequality. *(On demand)*

SOCY 2171. Social Problems. (3) Contemporary social problems and consequences for American society. (*Fall, Spring, Summer) (Evenings*)

SOCY 3090. Topics in Sociology. (1-3) Prerequisite: SOCY 1101. Examination of specialized sociological topics. May be repeated for credit as topics vary.

SOCY 3110. American Minority Groups. (3) Prerequisite: SOCY 1101. Relations between dominant and minority groups; the establishment, maintenance, and decline of dominance involving racial, ethnic, and religious minorities. (*Yearly*)

SOCY 3132. Sociology of Sport. (3) Prerequisite: SOCY 1101 or permission of instructor. Dynamics and emergence of sport; reciprocal influence between sport and society; values, norms, and roles in sports. *(On demand)*

SOCY 3143. Social Movements. (3) Prerequisite: SOCY 1101. Analysis of collective behavior, ideology, development, and organizations of movements seeking or resisting change. (*Yearly*)

SOCY 3153. Evolution of Sociological Theory. (3) Prerequisite: SOCY 1101. Origins and evolution of fundamental sociological concepts and theories. (*Fall, Spring*)

SOCY 3154. Evolution of Sociological Theory – Writing Intensive. (3) (W) Prerequisite: SOCY 1101. Origins and evolution of fundamental sociological concepts and theories. *(On demand)*

SOCY 3161. Socialization and Society. (3) Prerequisite: SOCY 1101. Analysis and process of socialization, social interaction, and sociocultural dimension of personality. (*Yearly*)

SOCY 3173. Criminology. (3) Prerequisite: SOCY 1101. Nature and historical development of crime and political-economic organization of crime, criminal law, and theories of crime causation. (*Fall, Spring)*

SOCY 3175. Crowds, Riots, and Disasters. (3) Prerequisite: SOCY 1101. Collective behavior in everyday life; crowds, rumors, fads, fashion; collective behavior that disrupts social order; riots and responses to disaster; response of individuals, organizations and communities to natural disasters, e.g., floods, hurricanes, tornadoes, and earthquakes. *(Yearly)*

SOCY 3210. Black Families in the Diaspora. (3) Crosslisted as AFRS 3210 and LTAM 3110. This course is designed to acquaint students with historical and contemporary experiences of peoples of African descent in the Caribbean and Latin American countries with specific emphasis on family structure and family relationships. Includes discussion of theories, history, impact of globalization on family structure, roles of women and identity, socioeconomic status and mobility,

slavery, colonialism, and capitalism. The course is designed to provide students with a better understanding of the comparative relationships and links between family structures and common life experiences among peoples of African descent in different parts of the world, with specific emphasis on the Caribbean and Latin American regions. *(On demand)*

SOCY 3250. Political Sociology. (3) Crosslisted as POLS 3250. Prerequisite: SOCY 1101. Sociological analysis of the relationship between social, economic and political systems. Focuses on power relations in society and its effects on the distribution of scarce resources. Topics covered may include: theories of power and the nation state, political participation and voting, religion and politics, the comparative welfare state, media and ideology, the global economy, war and genocide, revolutions, and social movements. Not open to students who have credit for SOCY 3251 or POLS 3251. *(Yearly)*

SOCY 3251. Political Sociology. (3) (O) Crosslisted as POLS 3251. Prerequisite: SOCY 1101. Sociological analysis of the relationship between social, economic and political systems. Focuses on power relations in society and its effects on the distribution of scarce resources. Topics covered may include: theories of power and the nation state, political participation and voting, religion and politics, the comparative welfare state, media and ideology, the global economy, war and genocide, revolutions, and social movements. Not open to students who have credit for SOCY 3250 or POLS 3250. *(As needed)*

SOCY 3261. Human Sexuality. (3) Prerequisite: SOCY 1101 or permission of instructor. Human sexuality research; teenage pregnancy; birth control; sex education; sexual fantasy; pornography; homosexuality and bisexuality; sexual communication; and heterosexual alternatives. (*Fall, Spring, Summer*)

SOCY 3267. Sociology of Dying, Death, and Bereavement. (3) Crosslisted as GRNT 3267. Social definitions of death, process of dying, facing death across the life course, grief, bereavement, bioethical issues impacting individuals and society. *(Yearly)*

SOCY 3895. Directed Individual Study. (1-4) Prerequisite: Permission of the instructor. Supervised investigation of a sociological topic. May be repeated for credit; up to six hours may be applied to the major. (*Fall, Spring, Summer*)

SOCY 4090. Topics in Sociology. (1-3) Prerequisite: SOCY 1101. Examination of specialized sociological topics. Examples: Sociology of religion, Modern Japan. May be repeated for credit. *(On demand)*

SOCY 4110. Sociology of Aging. (3) Crosslisted as GRNT 4110. Prerequisite: SOCY 1101 or permission of the instructor. Study of the changing characteristics, aspirations, and needs of older adults and their impact upon such institutions as the family, work, the economy, politics, education, and health care; emphasis on sociological theories of aging, contemporary research, and the analysis of specific aging policies and programs. *(Fall)*

SOCY 4111. Social Inequality. (3) Prerequisite: SOCY 1101. Distribution of power, privilege, and prestige; correlates and consequences of inequality; national and international comparisons. (*Yearly*)

SOCY 4112. Sociology of Work. (3) Prerequisite: SOCY 1101 or permission of instructor. The emergence of post- industrial society and technological change in the workplace; analysis of their impacts on organizations, workers, family, and community. (*Yearly*)

SOCY 4124. Sociology of the Community. (3) Prerequisite: SOCY 1101. Concepts and methods of community analysis of planned and unplanned community change. (*On demand*)

SOCY 4125. Urban Sociology. (3) Prerequisite: SOCY 1101 or permission of the instructor. Cross cultural analysis of urban development, social structure, ecology, demographic composition, and social problems. (*Yearly*)

SOCY 4130. Sociology of Health and Illness. (3) Prerequisite: SOCY 1101 or permission of instructor. The cultural and structural influences on the definition of health and illness; models of illness behaviors; health demography and epidemiology; social influences on the delivery of health care; ethical issues surrounding health and illness; and the development of relevant social policy. *(Yearly)*

SOCY 4131. Family Policy. (3) Prerequisite: SOCY 1101 or permission of instructor. Critical analysis of four aspects of family policy: the historical and cultural factors that have resulted in specific policies affecting the family; the specification of contemporary family policy at both the national and state level; the intended and actual application of existing family policy; and the implications and impact of policies as they are interpreted and implemented. *(On demand)*

SOCY 4134. Families and Aging. (3) Crosslisted as GRNT 4134. Prerequisite: SOCY 1101 or permission of instructor. Theories explaining the formation and functioning of American families with emphasis on the impact of the aging of society. Examination of the current demographic trends and expectations of multigenerational families, as well as the future demands and modifications. *(On demand)*

SOCY 4135. Sociology of Education. (3) Prerequisite: SOCY 1101 or permission of the instructor. Educational institution; the school class as a social system; the school as a social environment and a complex organization. (*Yearly*)

SOCY 4150. Older Individual and Society. (3) Crosslisted as GRNT 4150. Study of the social and cultural context on the lives of aging individuals in American society. Will include a focus on expectations, social interactions, and psychological well-being in the context of retirement, caregiving, and health. *(Yearly)*

SOCY 4154. Contemporary Social Theory. (3) Prerequisite: SOCY 3153 or permission of instructor. Elements and process of theory construction; contemporary social theories, such as theories of social order and causation, power, class structure, and inequality; group process theories; post-modern theories. (*On demand*)

SOCY 4155. Sociological Research Methods. (4) Prerequisite: SOCY 3153 or 3154 or permission of instructor. Formulation of research problems; research designs; social measurement; sampling; collection, analysis, and interpretation of data. Three hours of lecture/discussion and completion of weekly laboratory units. (*Fall, Spring*)

SOCY 4155L. Sociological Research Methods Laboratory. (0) Corequisite: SOCY 4155. Required weekly laboratory session for Sociological Research Methods.

SOCY 4156. Quantitative Analysis. (4) Prerequisites: SOCY 4155 or permission of instructor. Concepts and procedures of sociological analysis; data processing; measurement theory; and quantitative models of analysis. Three hours of lecture/discussion and completion of weekly laboratory units. (*Fall, Spring*)

SOCY 4156L. Quantitative Analysis Laboratory. (0) Corequisite: SOCY 4156. Required weekly laboratory session for Quantitative Analysis.

SOCY 4165. Sociology of Women. (3) (W) Crosslisted as WMST 4165. Prerequisite: SOCY 1101 or WMST 1101 and junior standing or permission of the instructor. Examines how the social world of women is influenced by their race, ethnicity, and class. Attention is given to changing roles of women in public and private spheres and to the role conflict that arises as women attempt to meet obligation in families, communities, and the workplace. *(Yearly)*

SOCY 4168. Sociology of Mental Health and Illness. (3) (W) Prerequisite: SOCY 1101 or permission of instructor. Mental health and illness in its social context; relationship between social structures and mental health/disorder. How social factors affect the definition and treatment of mental disorders; the effects of demographic variables on mental health and illness; the role of social support and stress; the organization, delivery and evaluation of mental health care services; and considerations of mental health care policy. *(On demand)*

SOCY 4172. Sociology of Deviant Behavior. (3) Prerequisite: SOCY 1101 or permission of instructor. Social definition of deviance; examination of the social processes producing unusual, non-standard, and condemned behavior; and social responses to deviant behavior. (*Fall, Spring*)

SOCY 4263. Sociology of Small Groups. (3) (O, W) Prerequisite: SOCY 1101 or permission of instructor. Systematic analysis and application of theoretical and empirical research pertaining to small groups. (*Yearly)*

SOCY 4480. Internship in Sociology. (3-6) Prerequisite: Permission of the department. Research and/or in-service training for selected students in cooperating community organizations. Specified content based upon a contract between student, department, and community organization. May be repeated for credit up to six semester hours. Offered only on a *Pass/No Credit basis. (Fall, Spring, Summer)*

SOCIAL WORK (SOWK)

SOWK 1101. The Field of Social Work. (3) Historical development and philosophy of social work as a profession: personal and societal needs; methods and organizational arrangements; and roles and tasks of social workers. *(Fall, Spring, Summer)*

SOWK 2182. Human Behavior in the Social Environment I. (3) Prerequisite: BIOL 1110, SOCY 1101, and PSYC 1101. Prerequisite or corequisite: SOWK 1101. Human behavior and the social environment in relation to developmental theory and transitions across the life span. (*Fall, Summer*)

SOWK 2183. Human Behavior in the Social Environment II. (3) Prerequisite: SOWK 2182. Human behavior in the social environment in relation to interactions among individuals, families, communities, and larger social systems. *(Spring, Summer)*

SOWK 3090. Topics in Social Work. (1-3) Specialized topics in social work. May be repeated for credit as topics vary. (A list of specific courses offered each term is available through campus course listings.) *(Fall, Spring, Summer)*

SOWK 3100. Social Work Research. (3) Prerequisite: Upper Division standing. Introduction to research methods and skills used in social work. *(Fall)*

SOWK 3120. Diversity and Populations-at-Risk. (3) Prerequisite: Upper Division standing. Issues of race, ethnicity, gender, sexual orientation, social class, age, and ability in social work practice. *(Fall)*

SOWK 3181. Practice Methods I. (3) Prerequisite: Upper Division standing. Corequisite: SOWK 3482, SOWK 3683. Generalist social work practice methods with an emphasis on working with individuals. *(Fall)*

SOWK 3182. Practice Methods II. (3) Prerequisite: Upper Division standing, SOWK 3181. Corequisite: SOWK 3483, SOWK 3685. Generalist social work practice methods with an emphasis on working with families and groups. *(Spring)*

SOWK 3184. Practice Methods III. (3) Prerequisite: Upper Division standing, SOWK 3181. Corequisite: SOWK 3484, SOWK 3685. Generalist social work practice methods with an emphasis on working with communities and large systems. *(Spring)*

SOWK 3201. Foundations of Social Welfare. (3) (W) Prerequisite: Upper Division standing. History of and current trends in social welfare; values and conflicts that influence social welfare programming. *(Fall)*

SOWK 3202. Social Welfare Policy. (3) Prerequisite: Upper Division standing and SOWK 3201. Nature and development of social welfare policy; implications of policy for program design and service delivery. *(Spring)*

SOWK 3482. Field Placement I. (6) Prerequisite: Upper Division standing. Corequisite: SOWK 3181. Directed field experience two days per week under supervision in selected community agencies. *(Fall)*

SOWK 3484. Field Placement II. (9) Prerequisite: Upper Division standing, SOWK 3181, SOWK 3482, SOWK 3683. A continuation of SOWK 3482, directed field experience three days per week under supervision in selected community agencies. *(Spring)*

SOWK 3683. Field Seminar I. (1) Prerequisite: Upper Division standing. Corequisite: SOWK3181. Classroom analysis and discussion of the student field placement experience. *(Fall)*

SOWK 3685. Field Seminar II. (1) Prerequisite: Upper Division standing, SOWK 3181, SOWK 3482, SOWK 3683. Corequisite: SOWK 3182, SOWK 3184. A Continuation of SOWK 3683, classroom analysis and discussion of the student field placement experience. *(Spring)*

SOWK 3895. Directed Individual Study. (1-4) Prerequisite: Permission of the department. Supervised investigation of a special problem or area of practice. May be repeated for credit. *(Fall, Spring, Summer)*

SOWK 4100. Ethnicity and Aging. (3) Prerequisite: permission of the instructor. Examines the changing characteristics, goals, and needs of older African-Americans, Asian-Americans, Native Americans, and Hispanics. Provides a diversity of perspectives from which to view the relationship of ethnicity to aging including the impact of the family, work, education, economy, illness, behavior, and health care. (*On demand*)

SOWK 4101. Social Work Practice with Older Adults. Prerequisite: Permission of the department. Social work practice with older adults with an emphasis on assessment, intervention planning, and implementation. *(On demand)*

SPANISH (SPAN)

SPAN 1201. Elementary Spanish I. (4) For students with limited or no previous experience in Spanish. First course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in Spanish. *(Fall, Spring, Summer) (Evenings)*

SPAN 1202. Elementary Spanish II. (4) Prerequisite: SPAN 1201 or equivalent. Second course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in Spanish. *(Fall, Spring, Summer)(Evenings)*

All 2000-level courses except for SPAN 2009 fulfill the language requirement of non-majors who are required to take one intermediate-level language class. SPAN 2050 counts if it is offered for 3 credits.

SPAN 2009. Hispanic Literature in English Translation. (3) (W) Studies of Spanish or Spanish American literature in translation. Not applicable toward Spanish major. May be repeated for credit as topics vary. Course conducted in English. (*On demand*)

SPAN 2050. Topics in Spanish. (1-3) Prerequisite: SPAN 1202 or permission of the Department. Study of a particular facet of the Spanish language, culture or literature. May be repeated for credit as topics vary. (*On demand)*

SPAN 2200. Spanish for Reading Knowledge. (3) Prerequisite: SPAN 1202 or equivalent. Review of Spanish grammar with emphasis on developing reading skills. Taught primarily in English. Does not count for major or minor credit. *(Fall, Spring, Summer)*

SPAN 2201. Intermediate Spanish I. (3) Prerequisite: SPAN 1202 or permission of the Department; recommended SPAN 2201L be taken concurrently. Continued training in grammar. Intensive practice in reading, writing, and speaking. *(Fall, Spring)*

SPAN 2201L. Spanish Communication Skills Development I. (3) (O) Prerequisite: SPAN 1202, recommended SPAN 2201 be taken concurrently. Fulfills the 2000-level language requirement for non Spanish majors. Continued practice in all four skills: speaking, listening, reading, writing. *(Fall, Spring)*

SPAN 2202. Intermediate Spanish II. (3) Prerequisite: SPAN 2201 (2201L also recommended) or permission of the Department; also recommended SPAN 2202L be taken concurrently. Builds on skills acquired in the first semester intermediate level. Introduces advanced grammatical concepts. *(Fall, Spring)*

SPAN 2202L. Spanish Communication Skills Development II. (3) Prerequisite: SPAN 2201 or permission of the Department; recommended SPAN 2202 be taken concurrently. Continued practice in all four skills: speaking, listening, reading, writing. *(Fall, Spring)*

SPAN 2205. Spanish Conversation. (3) (O) Prerequisite: SPAN 2201 or equivalent. Intensive oral practice in conversation through exploration of varied topics. Speeches, presentations, discussions, and dialogs. *(Fall, Spring)*

SPAN 2210. Introduction to Spanish for Commerce. (3) Prerequisite: SPAN 1202 or permission of the

Department. Fundamentals of commercial Spanish, study of the language, protocol, and cultural environment of the Spanish-speaking business world. Basic business vocabulary, cultural concepts, and grammatical review through situational practice. Fulfills the 2000-level language requirement for non-Spanish majors. *(Fall, Spring)*

SPAN 2211. Spanish for Criminal Justice Professionals. (3) Prerequisite: SPAN 1202 or permission of the Department. Fulfills the 2000-level language requirement for non-Spanish majors. *(Fall, Spring)*

SPAN 2212. Spanish for Health Care Professionals. (3) Prerequisite: SPAN 1202 or permission of the Department. Fulfills the 2000-level language requirement for non-Spanish majors. *(Fall, Spring)*

SPAN 3009. Masterpieces of Hispanic Literature in English. (3) (W) Prerequisites: sophomore standing and ENGL 1102, or permission of instructor. Advanced studies of Spanish or Spanish-American literature in English translation. Knowledge of Spanish not required. Not applicable toward a Spanish major or minor. May be repeated for credit as topics vary. Course conducted in English. *(On demand)*

SPAN 3019. Hispanic Women Writers in English. (3) (W) Crosslisted as LTAM 3319 and WMST 3019. Prerequisite: ENGL 1102 and sophomore standing, or permission of instructor. Examination of prose and poetry by women writers from Spain and the Americas to understand women's voices and other cultures. Conducted in English. Knowledge of Spanish not required. Not applicable toward Spanish major or minor. *(On demand)*

SPAN 3029. Cultural Dimension of Doing Business with Spanish-Speaking Countries. (3) Prerequisite: ENGL 1102 or 1103. Development of cultural awareness for conducting business with Spanish-speaking countries and U.S. Hispanic communities. Conducted in English. Not applicable toward Spanish major or minor. *(Alternate years)*

SPAN 3030. Business and Culture in the Hispanic Caribbean Region. (3) Prerequisite: ENGL 1102 or 1103. Development of intercultural understanding and communication skills for conducting business in the greater Hispanic Caribbean region. Conducted in English. Not applicable toward Spanish major or minor. *(Alternate years)*

SPAN 3050. Topics in Spanish. (1-3) Prerequisite: SPAN 2202 or equivalent. Study of a particular facet of the Spanish language, culture, or literature at the 3000 level not covered by other SPAN courses. May be repeated for credit as topics vary. *(On demand))*

SPAN 3160. Studies in Hispanic Film. (3) The study of Spanish Peninsular, Spanish American, or Hispanic/Latino films. Not applicable toward Spanish major or minor. Course conducted in English. May be repeated for credit as topics vary. *(Yearly)*

SPAN 3201. Advanced Grammar and Composition. (3) Prerequisite: SPAN 2202 or permission of the Department. Advanced studies in Spanish grammar, composition, syntax, and rhetoric. *(Fall, Spring)*

SPAN 3202. Advanced Conversation and Composition. (3) Prerequisite: SPAN 2202 or permission of the Department. Study and practice of formal, academic presentations and reports both written and oral. Introduction to concepts in elocution and phonetics. *(Fall, Spring)*

SPAN 3203. Advanced Writing and Rhetoric for Native Speakers. (3) Prerequisites: SPAN 2202 or permission of the Department; and student must be a native speaker of Spanish, as determined by the student's advisor. Continued studies in Spanish grammar, composition, syntax, and rhetoric for academic purposes. Replaces SPAN 3202. *(Fall)*

SPAN 3208. Introduction to Literary Analysis. (3) Prerequisite or corequisite: SPAN 3201, 3202, or 3203 or permission of the Department. Continued work with vocabulary building and reading skills. Introduction to the theory and practice of reading literary texts in Spanish. *(Fall, Spring)*

SPAN 3209. Spanish Civilization and Culture. (3) Prerequisite or corequisite: SPAN 3201, 3202, 3203 or permission of the Department. Introduction to the cultural heritage of peninsular Spain. *(Alternate semesters)*

SPAN 3210. Spanish American Civilization and Culture. (3) Prerequisite or corequisite: SPAN 3201, 3202, 3203 or permission of Department. Introduction to the cultural heritage of Spanish America. *(Alternate semesters)*

SPAN 3211. Introduction to Spanish Peninsular Literature. (3) Prerequisites: SPAN 3208 and SPAN 3201, 3202, 3203 or permission of the Department. Introduction to the literary heritage of Spain. Reading and analysis of representative works. *(Fall, Spring)*

SPAN 3212. Introduction to Spanish American Literature. (3) Prerequisites: SPAN 3208 and SPAN 3201, 3202, 3203, or permission of the Department. Introduction to the literary heritage of Spanish America. Reading and analysis of representative works. *(Fall, Spring)*

SPAN 3220. Spanish for Business and International Trade. (3) Prerequisites: SPAN 3201 or 3202 or 3203 or permission of the Department. Introduction to spoken and written language of the Spanish-speaking business world. Acquisition of and practice with general commercial terminology used in Spanish for such functional business areas as economics, management, marketing, finance, and import-export. *(Fall, Spring)*

SPAN 3800. Directed Individual Study. (1-3) Prerequisite: permission of the Department; normally open only to Spanish majors and minors. Individual work on a selected area of study. To be arranged with the

instructor during the preceding semester. By special permission only. May be repeated for credit. (*On demand*)

SPAN 4050. Selected Topics in Spanish. (1-3) Prerequisites: two 3000-level courses or permission of the Department. Consideration of a predetermined topic not covered by other SPAN courses. May be repeated for credit as topics vary. *(On demand)*

SPAN 4120. Advanced Business Spanish I. (3) Prerequisites: SPAN 3201, 3202, or 3203 and SPAN 3220 or permission of the Department. Advanced studies in Business Spanish, intensive intercultural communication practice in speaking, listening comprehension, reading, writing, and translation/interpretation in functional business areas such as economics, banking, management, and human resources. *(Fall)*

SPAN 4121. Advanced Business Spanish II. (3) Prerequisites: SPAN 3201, 3202, or 3203 and SPAN 3220 or permission of the Department. Advanced studies in Business Spanish, intensive intercultural communication practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as marketing, finance, and import-export. *(Spring)*

SPAN 4122. Studies in Advanced Business Spanish. (3) Crosslisted as LTAM 4322. Prerequisites: SPAN 3201, 3202, 3203 and SPAN 3220 or permission of the Department. Advanced studies in special topics in Business Spanish (e.g., Tourism in Spain and Latin America, Free Trade in the Americas (NAFTA/TLCAN, Mercosur, The Andean Pact, CAFTA-DR), Socioeconomic Issues in the Greater Caribbean, Business and Technology in Latin America and Spain). May be repeated for credit if topic varies. *(On demand)*

SPAN 4201. Nineteenth-Century Spanish Literature. (3) Prerequisite: SPAN 3211, 3212, or permission of the Department. Survey of peninsular literature from Costumbrismo through the Generation of 1898. *(Alternate years)*

SPAN 4202. Twentieth-Century Spanish Literature. (3) Prerequisite: SPAN 3211, 3212, or permission of the Department. Treatment of major literary developments from the Generation of 1898 to present day. *(Alternate years)*

SPAN 4205. Novel of the Golden Age. (3) Prerequisites: SPAN 3211, 3212, or permission of the Department. El Lazarillo through El Criticón. *(Alternate years)*

SPAN 4206. Theater of the Golden Age. (3) Prerequisite: SPAN 3211, 3212, or permission of the Department. Study of works of the leading dramatists of the period. *(Alternate years)*

SPAN 4210. Studies in Spanish American Poetry. (3) Prerequisite: SPAN 3211, 3212, or permission of the Department. Studies of colonial, post-independence, 20th-century, and contemporary Spanish American poetry. May be repeated for credit if topic varies. *(Alternate years)*

SPAN 4211. Studies in Spanish American Prose Fiction. (3) Prerequisites: SPAN 3211, 3212, or permission of the Department. Studies of colonial, post-independence, 20th-century, and contemporary Spanish American prose fiction. May be repeated for credit if topic varies. *(Alternate years)*

SPAN 4212. Studies in Spanish American Theater. (3) Prerequisites: SPAN 3211, 3212, or permission of the Department. Studies of colonial, post-independence, 20th-century, and contemporary Spanish American theater. May be repeated for credit if topic varies. *(On demand)*

SPAN 4213. Cervantes. (3) Prerequisites: SPAN 3211, 3212, or permission of the Department. Study of Cervantes' masterpiece, *Don Quijote,* and/or other representative works. *(Alternate years)*

SPAN 4214. Studies in Hispanic Children's Literature. (3) Crosslisted as LTAM 4314. Prerequisite: SPAN 3211 or 3212 or permission of the Department. Literary works in Spanish written for children. May be repeated for credit if topic varies. *(On demand)*

SPAN 4215. Studies in Regional Literature of the Americas. (3) Crosslisted as LTAM 4315. Prerequisite: SPAN 3211, 3212, or permission of the Department. Studies of Mexican, Central American, Caribbean, Andean, Amazonian, or Southern Cone literature. Readings from representative works. Works from non Spanish speaking areas read in Spanish translation. May be repeated for credit if topic varies. *(On demand)*

SPAN 4216. Social, Political, Cultural, Economic Issues in Hispanic Literature. (3) Crosslisted as LTAM 4316. Prerequisite: SPAN 3211, 3212, or permission of the Department. Contextual issues surrounding Hispanic literature. *(On demand)*

SPAN 4217. Topics in Hispanic Culture and Civilization. (3) Crosslisted as LTAM 4217. Prerequisite: SPAN 3211, 3212, or permission of the Department. Various topics involving the fine arts: music, dance, art, film. May be repeated for credit if topic varies. Applicable toward Spanish major or minor only when taught in Spanish. *(On demand)*

SPAN 4231. Spanish Phonetics. (3) Prerequisite: Two courses at the 3000-level or permission of the Department. Detailed analysis, description, and production of Spanish sounds. Practical exercises with phonetic transcription and recordings. *(On demand)*

SPAN 4232. Spanish Linguistics. (3) Prerequisites: two courses at the 3000-level. Introduction to different fields of Spanish linguistics studies: sociolinguistics, synchronic and diachronic perspectives of phonetics, morphology, syntax, and semantics. (*On demand*)

SPAN 4233. History of the Spanish Language. (3) Prerequisites: two courses at the 3000-level. Strongly

recommended to have completed SPAN 4232. The evolution of Spanish from Latin and the effects of this evolution on Spanish phonetics, morphology, syntax, and semantics . (*On demand*)

SPAN 4400. Honor's Thesis. (3) Prerequisite: at least 21 hours of Spanish at the 3000-level and above completed with a 3.5 GPA. Directed research and writing of an Honor's thesis. *(On demand)*

SPAN 4410. Professional Internship in Spanish. (1-6) Prerequisite: Honors status or permission of the department. Faculty-supervised field and/or research experience in a cooperating profession (e.g., business) or community organization within the Hispanic Community. Contents of internship based upon a contractual agreement among the student, department, and business or community organization. Offered on a Pass/No Credit basis. *(Fall, Spring, Summer)*

SPAN 4800. Directed Individual Study. (1-3) Prerequisite: permission of the Department; normally open only to Spanish majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester. By special permission only. May be repeated for credit. (*On demand*)

SPECIAL EDUCATION (SPED)

SPED 2100. Introduction to Students with Special Needs. (3) Characteristics of students with special learning needs, including those who are gifted and those who experience academic, social, emotional, physical, and developmental disabilities. Legal, historical, and philosophical foundations of special education and current issues in providing appropriate educational services to students with special needs. Field-based clinical activity required. *(Fall, Spring, Summer)*

SPED 3100. Introduction to General Curriculum for Students with Special Needs. (3) Prerequisite: Admission to Teacher Education. Examines legislation and litigation that govern and/or influence services for individuals with disabilities. Scrutinizes the IEP process and investigates IEP objectives that reflect the general curriculum standards. Examines one's personal philosophy of education, which reflects the diversity students with disabilities. Identifies services, networks, organizations, and publications that serve or are relevant to individuals with disabilities. Identifies and critiques instructional implications of published research. *(Fall)*

SPED 3173. Special Education Assessment. (3) Prerequisite: Admission to Teacher Education. Fundamental concepts and skills in special education assessment for individuals with exceptional learning needs including curriculum-based assessment, curriculum-based measurement, and formal/standardized assessment. Requires two-hours of clinical field-based assignments each week for 10 weeks. *(Fall)*

SPED 3175. Instructional Planning in Special Education. (3) Prerequisite: Admission to Teacher Education. Strategies for the development, implementation, and monitoring of Individualized Education Plans (IEPs) for students with mild disabilities within the general education curriculum. Through the use of technology, students are expected to demonstrate proficiency in using the general education curriculum to develop and implement IEPs, unit, and individual lesson plans for instruction. *(Fall)*

SPED 3800. Individual Study in Special Education. (1-6) Prerequisite: permission of the student's advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. *(Fall, Spring, Summer)*

SPED 4000. Topics in Special Education. (1-6) May include classroom and/or clinical experiences in the content area. With department approval, may be repeated for credit for different topics. *(Fall, Spring, Summer)*

SPED 4111. Issues in Early Intervention for Children with Disabilities. (3) Prerequisite: Admission to Teacher Education. Current issues and trends in early intervention and preschool services for young children with disabilities and their families. Includes site visits scheduled throughout the semester. *(Fall, Summer)*

SPED 4112. Assessment of Young Children with Disabilities: B-K. (3) Prerequisite or corequisite: SPED 4111, GPA of at least 2.5 overall, and admission to Teacher Education. Strategies for interdisciplinary developmental assessments to identify needs and plan appropriate intervention programs for young children with disabilities and their families. Approximately 20 hours of field experience. *(Fall)*

SPED 4170. Special Education: Consultation and Collaboration. (W) (3) Prerequisite: Admission to Teacher Education. The course is designed to provide students an opportunity to develop their knowledge base and expertise in consultation and collaboration with parents, general education teachers, paraprofessionals, related service personnel, and/or human service personnel. A field-based clinical assignment of approximately 10 hours is required. *(Spring)*

SPED 4210. Instructional Methods and Materials: B-K. (3) Prerequisite: Admission to Teacher Education, SPED 4111, SPED 4112. Goal-setting, instructional design, and strategies for teaching young children with disabilities and their families. Includes a field-based assignment of approximately 20 hours. *(Spring)*

SPED 4211. Nature and Needs of Gifted Children. (3) Prerequisite: admission to Teacher Education. Examination of the historical and philosophical perspectives of education for gifted and talented learners with emphasis on answering the question, "What is giftedness?" Issues explored in the course include identification procedures, instructional options, the nature of intelligence and creativity, laws/policies, psychological and emotional correlates of talent, and

current research findings. *(On demand)*

SPED 4270. Classroom Management. (3) Prerequisite: Admission to Teacher Education. Theoretical context of positive behavioral support and related applied behavior analysis strategies, including functional behavioral assessment and intervention planning, necessary to manage effectively the classroom behaviors of individuals or groups of students with special needs and to promote success in the learning environment. A field-based clinical assignment of approximately 15 hours is required. *(Spring)*

SPED 4271. Systematic Instruction in the Adapted Curriculum. (3) Prerequisite: Admission to Teacher Education. Principles and procedures used to develop instructional support for students who need life skills and adaptations to general curriculum. Students are required to design and implement an instructional program. *(Fall)*

SPED 4272. Teaching Mathematics to Learners with Special Needs. (3) Prerequisite: Admittance to Teacher Education. This course will provide students with effective teaching strategies and materials in math for learners with special needs for teacher licensure in Special Education: General Curriculum (NCDPI). A 12-hour field-based clinical experience is a required component of the course. Assessment and application of instructional techniques are included in the course. *(Spring)*

SPED 4273. Life Skills. (3) Prerequisite: Admission to Teacher Education. Methods and materials for teaching functional skills in daily living, social, and vocational domains that will enable persons with special needs to live independently in their communities. Ecological assessment for life skills planning. *(Fall)*

SPED 4274. General Curriculum Access and Adaptations. (3) Prerequisite: Admission to Teacher Education. Strategies for developing curricular priorities for students who need adaptations to the general curriculum including ways to link to state standards in reading, math, writing, science, and other content areas. *(Spring)*

SPED 4275. Teaching Reading to Learners with Special Needs. (3) Prerequisite: Admittance to Teacher Education. This course will provide students with effective teaching strategies and materials in reading to learners with special needs for teacher licensure in Special Education: General Curriculum (NCDPI). A 12-hour field-based clinical experience is a required component of the course. Assessment and application of instructional techniques are included in the course. *(Fall)*

SPED 4277. Teaching Written Expression to Learners with Special Needs. (3) Prerequisite: Admittance to Teacher Education. This course will provide students with effective teaching strategies and materials in written expression to learners with special needs. A 12-hour field experience is a required component of the course. The field experience will include assessment and application of instructional techniques with students identified as receiving special education services. The course is designed to address core and specific competencies in teaching written expression to students with special needs for teacher licensure in Special Education: General Curriculum as stipulated by the North Carolina Department of Public Instruction *(Fall)*

SPED 4316. Transition Planning and Service Delivery. (3) Prerequisite: Admission to Teacher Education. Methods and procedures used in preparing students with disabilities for the world of work and independence are studied. *(Spring)*

SPED 4475. Student Teaching/Seminar: Special Education K-12: General Curriculum. (O) (15) Prerequisite: Application to Student Teaching. Student teaching is a planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a university supervisor and a cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching field in an appropriate grade level setting. The student spends approximately 35-40 hours per week in an assigned school setting. In addition, the student participates in 8-10 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

SPED 4476. Student Teaching/Seminar: Special Education K-12: Adapted Curriculum. (O) (15) Prerequisite: Application to Student Teaching. Student teaching is a planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a university supervisor and a cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching field in an appropriate grade level setting. The student spends approximately 35-40 hours per week in an assigned school setting. In addition, the student participates in 8-10 on-campus seminars scheduled throughout the semester. *(Fall, Spring)*

STATISTICS (STAT)

All STAT/MATH/OPRS courses offered by the Department of Mathematics and Statistics are approved to satisfy requirements for the Problem Solving (P) Goal of UNC Charlotte Education.

STAT 1220. Elements of Statistics I (BUSN). (3) Prerequisite: MATH 1100 or placement by the Department. Non-calculus based introduction to data summarization, discrete and continuous random variables (e.g., binomial, normal), sampling, central limit theorem, estimation, testing hypotheses, and linear regression. Applications of theory will be drawn from areas related to business. May not be taken for credit if credit has been received for STAT 1221 or 1222. *(Fall, Spring, Summer) (Evenings)*

STAT 1221. Elements of Statistics I. (3) Prerequisite: MATH 1100 or placement by the Department. Same topics as STAT 1220 with special emphasis on applications to the life sciences. May not be taken for credit if credit has been received for STAT 1220 or 1222. *(Fall, Spring)*

STAT 1222. Introduction to Statistics. (3) Prerequisite: MATH 1100 or placement by the Department. Same topics as STAT 1220 with special emphasis on applications to the social and behavioral sciences. May not be taken for credit if credit has been received for STAT 1220 or 1221. *(Fall, Spring, Summer) (Evenings)*

STAT 2122. Introduction to Probability and Statistics. (3) Prerequisite: MATH 1242 or permission of the department. A study of probability models, discrete and continuous random variables, inference about Bernoulli probability, inference about population mean, inference about population variance, the maximum likelihood principle, the minimax principle, Bayes procedures, and linear models. *(Fall, Spring, Summer) (Evenings)*

STAT 2223. Elements of Statistics II. (3) Prerequisite: Either STAT 1220, STAT 1221, STAT 1222, STAT 2122 or permission of the department. Topics include contingency analysis, design of experiments, more on simple linear regression, and multiple regression. Computers will be used to solve some of the problems. *(Fall)*

STAT 3110. Applied Regression. (3) (W) Prerequisite: STAT 2122 or permission of the department. Ordinary regression models, logistic regression models, Poisson regression models. *(Spring)*

STAT 3122. Probability and Statistics I. (3) Crosslisted as MATH 3122. *(Fall) (Evenings)*

STAT 3123. Probability and Statistics II. (3) Crosslisted as MATH 3123. *(Spring) (Evenings)*

STAT 3126. Applied Statistical Methods. (3) Prerequisites: MATH 3123 or permission of the department. Regression analysis, time series analysis, and forecasting. Survival models and their estimation. *(On demand)*

STAT 3128. Probability and Statistics for Engineers. (3) Prerequisite: MATH 2241. An introduction to: probability theory; discrete and continuous random variables and their probability distributions; joint probability distributions; functions of random variables and their probability distributions; descriptive statistics; point and interval estimation; one and two sample hypothesis testing; quality control; one and two factor ANOVA; and regression. Credit will not be given for both STAT 3128 and any of these courses: STAT 2122, MATH 3125, MATH/STAT 3122/3123.

STAT 3140. Design of Experiments. (3) Prerequisite: STAT 2122 or permission of the department. Randomization and blocking with paired comparisons, Significance tests and confidence intervals, experiments to compare *k* treatment means, randomized blocks and two-way factorial designs, designs with more than one blocking variable, empirical modeling, factorial designs at two levels. *(Fall) (Alternate years)*

STAT 3150. Time Series Analysis. (3) Prerequisites: STAT 2223 or permission of the department. Stationary time series models, ARMA processes, modeling and forecasting with ARMA processes, ARIMA models for nonstationary time series models, spectral densities. *(Spring) (Alternate years)*

STAT 3160. Applied Multivariate Analysis. (3) Prerequisite: STAT 2223 or permission of the department. Introduction to the fundamental ideas in multivariate analysis using case studies. Descriptive, exploratory, and graphical techniques; introduction to cluster analysis, principal components, factor analysis, discriminant analysis, Hotelling T^2 and other methods. *(Fall)*

STAT 4116. Statistical Computing. (3) Prerequisites: STAT 3123 or permission of the department. Introduction to a variety of computational techniques using various statistics software packages (S-Plus/R or SAS) and symbolic manipulation software packages. Topics include random number generation, density estimation, and re-sampling techniques (bootstrap, jackknife) and Gibbs sample. *(Spring)*

STAT 4123. Applied Statistics I. (3) Prerequisites: MATH 2164 with a grade of C or better and junior standing, or permission of the department. Review of stochastic variables and probability distributions, methods of estimating a parameter, hypothesis testing, confidence intervals, contingency tables. Linear and multiple regression, time series analysis. *(Fall) (Evenings) (Alternate years)*

STAT 4124. Applied Statistics II. (3) Prerequisites: STAT 4123 or permission of the department. Single factor analysis of variance. Multi-factor analysis of variance. Randomized complete-block designs, nested or hierarchical designs, Latin squares, factorial experiments. Design of experiments. *(Spring) (Evenings) (Alternate years)*

THEATRE (THEA)

(See also Dance and Theatre - DATH)

THEA 1103. Acting for Non-Theatre Majors. (2) Introduction to the nature of acting for the stage. Study and practice of acting principles, including voice development, movement, and the use of the imagination. (Does not serve as a prerequisite for THEA 2209.) *(On demand)*

THEA 1160. Creative Drama for the Classroom Teacher. (3) Drama and theatre as tools for exploring the processes of synthesis, creativity, divergent thinking, and experiential and authentic learning. *(Fall, Spring on demand)*

THEA 1210. Acting I. (3) (O) Continuation of the

voice/body and improvisational work begun in DATH 1100 while focusing on objectives and text analysis through scene work. Four contact hours. *(Fall, Spring)*

THEA 1860. Preliminary Experience in Student Teaching. (1) Prerequisite: THEA 1160. Observation of licensed theatre arts teachers at the secondary school level. Some participation in class activities required. Graded on a *Pass/Fail basis.* (*Fall, Spring)*

THEA 2140. Play Analysis. (3) Tools for developing the interpretation of the play script, including exploration of the ways scripts are used by directors, actors, designers, and dramaturges in preparing plays for the stage. *Theatre major/minor or permission of instructor required. (Spring)*

THEA 2207. Puppetry. (3) Types of puppets and the history of puppetry with emphasis on basic puppetry construction and production problems. *(On demand)*

THEA 2208. Audition Techniques. (2) Prerequisite: THEA 1209 or permission of instructor. The process of auditioning for stage, commercials, and film. Four contact hours. (*Spring) (Alternate years*)

THEA 2210. Acting II. (3) Prerequisite THEA 1209 or permission of instructor for non-majors. Further development of the skills and techniques used in preparing a role for performance. Advanced scene study and monologue work. Four contact hours. *(Fall)*

THEA 2402. Performance Practicum: Theatre. (1) Prerequisite: Audition. Practical application of performance techniques within a production setting, including auditions, rehearsals, and performances. May be repeated for credit. *(Fall, Spring)*

THEA 2460. Practicum in Creative Drama: K-8. (3) Prerequisite: THEA 1160 or permission of instructor. Study and application of advanced theories, concepts, competencies, and processes unique to primary and middle school settings, with particular attention to the various subject areas. Centered on in-school teaching experience and clinical practice. (*Spring)*

THEA 2640. Playwriting/Screenwriting. (3) (W) Writing plays for stage or screen and performing dramatic readings of fellow writers' scenes. *(Fall, Spring)*

THEA 3101. Theatre History I. (3) Theatre history from pre-classical periods to the seventeenth century. (*Fall)*

THEA 3102. Theatre History II. (3) Seventeenth century to the present. (*Spring)*

THEA 3130. Ancient, Medieval, and Asian Theatre. (3) Prerequisite: Junior standing or higher. The history and drama of ancient Greek, ancient Roman, medieval European, and traditional Asian forms of theatre. *(Alternate years)*

THEA 3131. Renaissance European Theatre. (3) Prerequisite: Junior standing or higher. The history and drama of Renaissance European theatre, including Shakespeare. *(Alternate years)*

THEA 3132. 17th to Early 20th Century Theatre. (3) Prerequisite: Junior standing or higher. The history and drama of European and American theatre, from the Restoration period to early twentieth-century realism and various antirealist movements. *(Alternate years)*

THEA 3133. Contemporary Theatre. (3) Prerequisite: Junior standing or higher. The history and drama of twentieth and twenty-first century theatre in America, Europe, Africa, and elsewhere. *(Alternate years)*

THEA 3211. Acting III. (3) Prerequisite: THEA 2209. In-depth study of sub-text, focusing on 19th Century Modern Realism. May be repeated for credit with change of approach. Four contact hours. *(Spring)*

THEA 3215. Acting IV. (3) Prerequisite: THEA 3209. Exploration of characters focusing on various historical periods, theatrical styles, and cultural influences. May be repeated once for credit. Four contact hours. *(Fall) (Alternate years)*

THEA 3221. Directing I. (3) Prerequisite THEA 1210 or permission of instructor. Principles and techniques of play directing including analyzing texts, staging, and communication with actors. *(Fall)*

THEA 3222. Directing II. (3) Prerequisite: THEA 2216. Continuation of THEA 2216, with emphasis on advanced analysis, coaching, communication with designers, and complex staging problems. (*Spring)*

THEA 3467. Student Teaching/Seminar: K-12 Fine and Performing Arts: Theatre. (15) (O) Prerequisite: approved application for student teaching; senior status; completion of professional education requirements; grades of *C* or better in all courses required for licensure. Corequisite: enrollment only in student teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in an appropriate grade level setting. *(Fall, Spring)*

THEA 4001. Topics in Theatre. (1-6) (W) Special topic in theatre. May be repeated for credit with change of topic. (*On demand*)

THEA 4140. Performance Theory. (3) (W) Prerequisite: Junior standing or higher and Theatre major/minor or permission of instructor required. Application of different perspectives to drama on the page, stage, and screen using various performance theories and approaches: semiotics, deconstruction, psychoanalysis, feminism, post-colonialism, and performance studies. *(Fall)*

THEA 4160. Theatre for Youth. (3) An examination of the important works in the genre of Theatre for Youth with an emphasis on playwrights and analysis of content

as it relates to social issues. *(Fall) (Alternate years)*

THEA 4165/5220. Methods of Facilitating Learning in Theatre Arts. (3) (W) Prerequisites: THEA 1860, THEA 2410, THEA 2411 and EDUC 2100; Junior standing or permission of instructor. Exploration of pedagogical methodologies in theatre arts and the application of theory to the classroom setting. Includes instructional planning and competencies for theatre arts classes. Includes clinical experience. *(Alternate Fall)*

THEA 4400/5400. Internship in Theatre. (3-6) Prerequisite: GPA of a least 2.5, junior status, and permission of Department chair. Research and/or in-service training for theatre majors and minors in cooperating organizations. Specific content is based upon a contract between the students, department, and professional organization. Graded on a Pass/Fail basis. *(Fall, Spring, Summer)*

THEA 4460/5410 Practicum in Secondary School Play Production: 9-12. (3) Prerequisite: THEA 1209 and THEA 2216 or permission of instructor. Study and application of advanced theories, concepts, competencies, and processes in theatre arts for teaching the specialized areas of production and performance in a secondary school setting (9-12). *(Alternate Spring)*

THEA 4600. Senior Seminar in Theatre. (1) Prerequisites: DATH 1600 and senior standing. Synthesis, integration, and application of theoretical and experiential study in dance and theatre through individual/group designed seminar topic. Investigation and planning for immediate and life-long career options through guest lectures, panel discussions, site visits, presentations, and related mini-projects. Two contact hours. Graded on a Pass/Fail basis. *(Fall)*

THEA 4601. Individual Project. (1-6) Prerequisite: Permission of Department Chair. May be repeated for credit. *(Fall, Spring, Summer)*

TRANSLATING (TRAN)

TRAN 3401. Introduction to Translation Studies (3) Prerequisites: Native or near native fluency in English and completion of French, German, or Spanish 2202, or the equivalent, with a grade of C or better. History, theory, pragmatics, and procedures of the field of translation. Introduction to text typology, terminology, and issues such as register, audience, editing, and computer-assisted translating. Conducted in English. *(Fall)*

TRAN 4402-F. Practicum in Translating I – French (3) Prerequisites: Completion of or concurrent enrollment in TRAN 3401 and a French 3000-level course or equivalent, with a grade of C or better, or permission of the department. Comparative stylistics, restructuring texts, editing, troubleshooting, and techniques of the translator in working with a variety of text types. Conducted in English and French. *(Spring/Alternate years)*

TRAN 4402-G. Practicum in Translating I – German (3) Prerequisites: Completion of or concurrent enrollment in TRAN 3401 and a German 3000-level course or equivalent, with a grade of C or better, or permission of the department. Comparative stylistics, restructuring texts, editing, troubleshooting, and techniques of the translator in working with a variety of text types. Conducted in English and German. *(Spring/Alternate years)*

TRAN 4402-S. Practicum in Translating I – Spanish (3) Prerequisites: Completion of or concurrent enrollment in TRAN 3401 and a Spanish 3000-level course or equivalent, with a grade of C or better, or permission of the department. Comparative stylistics, restructuring texts, editing, troubleshooting, and techniques of the translator in working with a variety of text types (e.g., business legal, medical, technical, etc.). Continues with history and theory of translation. Conducted in English and Spanish. *(Fall)*

TRAN 4403-F. Practicum in Translating II – French (3) Prerequisites: Completion of TRAN 4402-F, with a grade of C or better, or permission of the department. Critical analysis of different kinds of texts; translating for specific audiences; problems of terminology; development of working dictionaries in fields(s) of specialization. Conducted in English and French. *(Fall/Alternate years)*

TRAN 4403-G. Practicum in Translating II – German (3) Prerequisites: Completion of TRAN 4402-G, with a grade of C or better, or permission of the department. Critical analysis of different kinds of texts; translating for specific audiences; problems of terminology; development of working dictionaries in fields(s) of specialization. Conducted in English and German. *(Fall/Alternate years)*

TRAN 4403-S. Practicum in Translating II – Spanish. (3) Prerequisites: Completion of TRAN 3401 or TRAN 4402-S, and a Spanish 3000-level course or equivalent, each with a grade of C or better, or permission of the department. Further work in restructuring texts, editing, troubleshooting, and translation of a variety of literary and cultural text types (e.g., fiction, poetry, drama, essay, film). Continues with history and theory of translation. Conducted in English and Spanish. May be taken concurrently with TRAN 4404-S and may also count as course work for the Spanish major. *(Spring)*

TRAN 4404-F. Practicum in Translating III – French (3) (W) Prerequisites: Completion of or concurrent enrollment in TRAN 4403-F, with a grade of C or better, or permission of the department. Study of professional journals, technologies, protocol, and resources in the field (e.g., ATA, ALTA). Advanced issues of translation. Translation of a semester-long project in individual consultation. Conducted in English and French. *(Spring/Alternate years)*

TRAN 4404-G. Practicum in Translating III – German (3) (W) Prerequisites: Completion of or concurrent enrollment in TRAN 4403-G, with a grade of *C* or better,

or permission of the department. Study of professional journals, technologies, protocol, and resources in the field (e.g., ATA, ALTA). Advanced issues of translation. Translation of a semester-long project in individual consultation. Conducted in English and German. *(Spring/Alternate years)*

TRAN 4404-S. Practicum in Translating III – Spanish. (3) (W) Prerequisites: Completion of TRAN 3401 or TRAN 4402-S, and a Spanish 3000-level course or equivalent, each with a grade of C or better, or permission of the department. Vocational, pre-professionalizing activities. Study of professional journals, technologies, protocol, and resources in the field (e.g., ATA, ALTA). Advanced issues of translation. Translation of a semester-long project in individual consultation. Conducted in English and Spanish. May be taken concurrently with TRAN 4403-S. *(Spring)*

URBAN STUDIES (URBS)

URBS 2200. Introduction to Urban Studies. (3) Cross-listed with GEOG 2200. A survey course exploring the diverse perspectives and experience of North American Cities. Lectures and discussions will focus on the development, organization, function, and meaning of urban areas, as well as the multiple and complex relationships that exist between cities and the people who live and work within them. *(Fall, Spring)*

URBS 3050. Topics in Urban Studies. (3) Timely and important areas of scholarship and application relevant to urban studies. May be repeated for credit as topics vary with prior permission from Director of the Urban Studies Minor. *(On demand)*

URBS 3801. Independent Study. (1-3) Prerequisites: URBS 2200, declared Urban Studies Minor with Junior or Senior standing, a GPA of at least 2.0, permission of supervising instructor and Director of Urban Studies Minor. Area of study beyond the scope of current offerings to be devised by student and faculty member. May be repeated. Three hours of URBS 3801 may be used toward the URBS minor with prior approval of the Director of Urban Studies Minor. *(Fall, Spring, Summer)*

URBS 4401. Internship in Urban Studies. (3) Prerequisites: URBS 2200, declared Urban Studies minor with Junior or Senior standing, a GPA of at least 2.0 and permission of Director of Urban Studies Minor. Students work 8-10 hours per week (total 120 hours per semester) for 3 credit hours in an approved research or in-service placement relevant to urban studies. Specific content of internship based on a contract between the student, supervising professor, and community/corporate organization. Course may not be repeated for credit. *(Pass/No Credit) (Fall, Spring, Summer)*

WOMEN'S STUDIES (WMST)

WMST 1101. Introduction to Women's Studies. (3) Introduction to values associated with gender and basic issues confronting women in society, from a variety of cultural and feminist perspectives. *(Fall, Spring)*

WMST 2050. Topics in Women's Studies. (1-3) Credit hours vary with topics. Special topics in Women's Studies. May be repeated for credit as topics vary. *(On demand)*

WMST 2051. Topics in Women's Studies. (3) (W) Special topics in Women's Studies. May be repeated for credit as topics vary. *(On demand)*

WMST 2110. Women and the Media. (3) Crosslisted as COMM 2110. Examination of messages about women as conveyed in contemporary media (magazines, newspapers, videos, the Internet, video games, television, and movies.) The role of gender in the power structures of the media producers is also analyzed. *(Fall)*

WMST 2120. African American Women. (3) Crosslisted as AFRS 4120. This course explores how cultural, political, historical and economic factors shape African American women's positions and opportunities in society today. *(On demand)*

WMST 2123. Women in Cross-Cultural Perspective. (3) Crosslisted as ANTH 2123. A cross-cultural survey of the lives of women and the dynamics of gender throughout the world. Uses anthropological research to examine how gender influences evolution, social stratification, work, kinship, and perceptions of the body. *(Alternate years)*

WMST 2150. U. S. Women's History to 1877. (3) Crosslisted as HIST 2150. A survey of women's experience in the U. S. from colonization through the civil war and reconstruction. Special emphasis on the evolution of women's public roles and the impact of class, race, and region in shaping women's lives. *(Alternate years)*

WMST 2251. U.S. Women's History since 1877. (3) Crosslisted as HIST 2151. A survey of women's experience in the U.S. from reconstruction to the present. Special emphasis on work, family, and feminism, and the impact of class, race, and region in shaping women's lives. *(Alternate years)*

WMST 2252. European Women's History. (3) Crosslisted as HIST 2152. An exploration of women's experiences in western Europe and Russia, covering topics of religion, work, family, and politics. *(Alternate years)*

WMST 3019. Hispanic Women Writers in English. (3) (W) Crosslisted as LTAM 3319 and SPAN 3019. Prerequisite: ENGL 1102 and sophomore standing, or permission of instructor. Examination of prose and poetry by women writers from Spain and the Americas to understand women's voices and other cultures. Conducted in English. Knowledge of Spanish not

required. Not applicable toward Spanish major or minor. *(On demand)*

WMST 3050. Topics in Women's Studies. (3) Special topics in Women's Studies. May be repeated for credit as topics vary. (*On demand*)

WMST 3051. Topics in Women's Studies. (3) (W) Special topics in Women's Studies. May be repeated for credit as topics vary. *(On demand)*

WMST 3102. Changing Realities of Women's Lives. (3) (W) Influence of gender, race and class stereotypes on women's identities and choices. Examination of women's individual circumstances through writing. *(Fall, Spring, Summer)*

WMST 3110. Gender and Communication. (3) Crosslisted as COMM 3110. Examination of the relationship between language and gender. Topics covered include how language shapes perceptions of men/women; gender differences in verbal and nonverbal communication; and gendered communication in relationships, friendships, and the workplace. *(Spring)*

WMST 3111. Women in Judaism. (3) Crosslisted as RELS 3111. A survey of the roles and activities of Jewish women throughout Jewish history, as it is portrayed in a diverse sampling of Jewish religious literature and practice. *(Alternate years)*

WMST 3112. Women's Diaries and Women's Experience. (3) (W) This course examines why women keep diaries, how diaries provide an understanding of women's experiences, and how diaries may be read as literature. *(Fall, Spring)*

WMST 3130. Perspectives on Motherhood. (3) Examination of the social, political, and economic conditions surrounding motherhood in the U.S.; explores the history and representations of motherhood, contraceptive/abortion issues, pregnancy and birthing practices, gender-neutral, same-sex, and bi-racial parenting. *(Spring)*

WMST 3131. History of Sexuality. (3) Crosslisted as HIST 3131. An exploration of the roots of our modern attitudes toward sexuality beginning with ancient Greece and Rome, Judaism, and Christianity. Examination of changing attitudes and practices from the Enlightenment to the Victorians. Discussion of marriage, fertility control, abortion, prostitution, and homosexuality. *(On demand)*

WMST 3140. Domestic Violence. (3) A survey of domestic violence in the US focusing on female experience as both victim and survivor of partner abuse. We will evaluate theories of partner violence, examine types of abuse across diverse female lifespans, and discuss multicultural and gender expectations, treatment, modalities, and social policy implications. *(On demand)*

WMST 3150. Body Image. (3) This course will discuss body image through varying perspectives: size discrimination, advertising and consumerism, eating disorders, cosmetic surgery, self-image/male gaze, health vs. beauty, etc. All perspectives will be examined as they are projected across the intersection of sexism, racism, classism, ageism and sexuality. *(Yearly)*

WMST 3160. Gender and Education. (3) This course explores the relationship between gender and education, primarily in the context of formalized schooling. Topics include the history of women's education; gender identity and socialization; gender discrimination and biases in curriculum and classroom teaching; gender gaps in academic performance; and the relationship between educational choices and gender. *(Alternate years)*

WMST 3212. Women and Peacebuilding. (3) Exploration of the contributions women can make and have made to peacebuilding and conflict-resolution. *(On demand)*

WMST 3220. Feminist Thought. (3) (W) Cross-cultural and interdisciplinary survey of the main traditions of feminist theory in the context of their historical and philosophical roots. (*Yearly*)

WMST 3221. Feminist Thought. (3) Cross-cultural and interdisciplinary survey of the main traditions of feminist theory in the context of their historical and philosophical roots. *(On demand)*

WMST 3226. Psychology of Women. (3) Crosslisted as PSYC 3126. Prerequisite: PSYC 1101. Application of research in developmental, experimental, and clinical psychology to issues regarding women and gender. Includes such topics as gender-role development, gender differences in cognitive abilities and performance, psychological perspectives on women's physical and mental health, and violence toward women. *(Spring)*

WMST 3227. Feminist Philosophy. (3) Crosslisted as PHIL 3227. Views of contemporary feminist and female philosophers on traditional philosophical issues such as ethics, human nature, the construction of knowledge, modes of social and political organization, the relationship between the mind and the body, and the nature of God. *(Yearly)*

WMST 3231. Working Women/Women in Business. (3) Historical, sociological, legal, personal, and cross-cultural issues affecting working women. *(Summer)*

WMST 3803. Independent Study. (3) Prerequisite: permission of instructor and Women's Studies Coordinator. Supervised individual study and/or field-based experience in a topic or area of Women's Studies of particular interest to the student. May be repeated for credit. (*Fall, Spring*)

WMST 4050. Topics in Women's Studies. (1-3) Prerequisite and credit hours vary with topics. Special topics in Women's Studies. May be repeated for credit as topics vary. *(On demand)*

WMST 4051. Topics in Women's Studies. (3) (W) Special topics in Women's Studies. May be repeated for credit as topics vary. *(On demand)*

WMST 4120. Women's Studies International. (3) Crosslisted as INTL 3120. This course will explore policies affecting women's lives across international borders and will look at a range of topics from divorce, marriage, violence against women and abortion to work and poverty. *(Fall)*

WMST 4130. Female Adolescence in America. (3) This course explores the modern cultural, social and personal experience of young females in America. The central focus of the course will be the social construction of femininity and how it impacts female adolescents. We will examine the influence of race/ethnicity, class, and sexuality upon the lives of female adolescents. *(Yearly)*

WMST 4131. Culture, Pregnancy and Birth. (3) Crosslisted as ANTH 4131. This course explores how culture shapes the experience and practice of pregnancy and birth. Some of the topics we will explore include the birthing experience, midwifery, infertility, new reproductive technologies, and surrogate motherhood. *(On demand)*

WMST 4165. Sociology of Women. (3) Crosslisted as SOCY 4165. Prerequisite: SOCY 1101 or WMST 1101. Junior standing or permission of the instructor required. Examines how the social world of women is influenced by their race, ethnicity, and class. Attention is given to changing roles of women in public and private spheres, and to the role conflict that arises as women attempt to meet obligation in families, communities, and the workplace. *(Yearly)*

WMST 4191. Women's Health Issues. (3) Crosslisted as NURS 4191. Prerequisite: permission of the instructor. Exploration of contemporary issues in women's health from the feminist and women's health movement perspectives. (*Fall*)

WMST 4228. French Women Writers in Translation. (3) Prerequisites: junior standing and ENGL 1102 or equivalent. Advanced studies of literature and criticism by French women writers in English translation, with a focus on women's issues from a cross-cultural perspective. May be repeated for credit as topics vary. Course conducted in English. *(On demand)*

WMST 4260. Women: Middle Age and Beyond. (3) Crosslisted as GRNT 4260 and HLTH 4260. Position of older women in society and the particular problems of and issues for women as they age. *(Yearly)*

WMST 4401. Internship in Women's Studies. (3) Prerequisites: Declared Women's Studies minor and permission from the Director of Women's Studies. Research and in-service training in cooperative community organizations that provide services to women and their families. Specific content based on a contract between the student, supervising professor, and community organization. Graded on a H/P/NC basis. *(On demand)*

WMST 4601. Senior Colloquium. (3) Prerequisites: completion of 15 hours in women's studies, or permission of instructor. Critical examination of selected issues. *(On demand)*

Student Services and Programs

Housing and Residence Life

www.housing.uncc.edu

University residence halls, suites, and apartments offer students a variety of living arrangements. Four high-rise residence halls house a combination of either two students in each room or single rooms. Each room is equipped with dressers, study desks, chairs, and closets or wardrobes. Each floor has a central lounge, plus study and seminar rooms. Two elevators service each air-conditioned building. Each building also contains an office for the full-time professional staff (Residence Coordinator), student mail boxes, a vending area, a lounge, and a laundry room. A meal service contract is required in the high-rise residence halls.

In the majority of suite housing, two students share a double room and four students share a bath and a den area. A very limited number of suites are available in Squires Hall that house either two or four students but all in private bedrooms. Charles F. Lynch Hall (formerly Cypress Hall) for freshman students in Learning Communities houses four students in either single or double bedrooms. All buildings housing the suite communities also require a meal service contract, except Squires Hall.

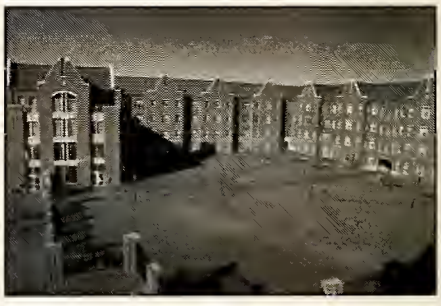
On-campus apartments offer students a more private living environment and require a more self-reliant lifestyle. Each apartment is a four-bedroom unit, with one student assigned to each bedroom. The four students share a bathroom area and kitchen complete with appliances and a living/dining space. A meal plan is optional, allowing students the experience of buying and preparing their own food, if they so desire.

Our newest housing addition is Greek Village, which opens in 2007. Fourteen fraternities and sororities will be housed in the new Greek Village. Each house will have a chapter room and kitchen for common use and will hold 28 or 14 members. This area will serve as a centerpiece for the Greek Community.

For information about summer housing, please contact the Housing and Residence Life Office.

Students who plan to live on campus should apply as soon as possible, as assignments are made according to a combination of factors including: date of application, community preferences, roommate requests, space availability, class year, and building/room preferences. Application for housing may be made online at www.housing.uncc.edu following the student's admission to the University. A $100 deposit is required with the application.

Housing facilities designed specifically for students in wheelchairs are available. Wheelchair students who receive confirmation of residential space have priority in assignment to these facilities *as long as the University is able to offer space*. It is extremely important that the housing application is received before all space is committed so that his priority for assignment to appropriate facilities can be exercised. Students utilizing wheelchairs may be considered for priority status on the waiting list on the basis of (1) the date of application and (2) the degree of utilization of wheelchair-equipped facilities as compared to the proportion of wheelchair students who apply.



Assignment to a disability accessible housing space requires documentation of the disability and special needs in accommodations by the Office of Disability Services. Documentation must be provided to Disability Services when the housing application is submitted and no later than June 1. The University does not assume

any responsibility for the provision of attendants for students with disabilities. Such arrangements are entirely the responsibility of the individual student and should be established well in advance of the time the services are to begin.

Dining

www.auxiliary.uncc.edu/dining/diningservices.htm

Students living in Sanford, Moore, Holshouser, Scott, Hawthorn, Hickory, Cedar, Sycamore, Oak, Lynch, and Witherspoon Suites **must** have a dining service contract. Freshmen may choose from one of several Traditional Meal Plans especially designed to meet their needs. Upper-classmen living in Sanford, Moore, Holshouser, Scott, Hawthorn, Hickory, Cedar, Sycamore, Oak, Cypress, and Witherspoon Suites may select any of the Traditional Meal Plans or Declining Balance Meal Plans designed for students living in these areas. Traditional Meal Plan meals, lunch and dinner, are offered in the Resident Dining Hall (RDH) or the Crossroads Café. Declining balance plans can be used as cash at any dining services facility on campus.

A current list of meal plan options may be obtained from the Dining Services Office (Cone Center) or the Meal Plans, 49er Card, and Insurance Office located in the Auxiliary Services Building. Information can also be found online at www.auxiliary.uncc.edu.

During the period of occupancy, UNC Charlotte will provide meals according to the plan selected, with **the exception of no meals being provided during fall break, Thanksgiving break, winter break, and spring break**.

Dining service contracts are binding for one semester. Cancellations can be made only under special circumstances (e.g., withdrawal from the University or moving to an on-campus apartment) and only upon the approval of the Office of Meal Plans, 49er Card, and Insurance. Students may make meal plan changes during the registration period, which lasts through the first day of classes. The first change will be at no charge, however, an administrative charge of $25 will be assessed for each subsequent change. Students living in required areas, Sanford, Moore, Holshouser, Scott, Hawthorn, Hickory, Cedar, Sycamore, Oak, Lynch, and Witherspoon Suites, may make changes again during the two days of housing room change on a pro-rata basis. **No other changes may be made after this time, unless the student moves from required housing.** Students living in apartments and off-campus may make changes and cancellations on a pro-rata basis until fall/spring breaks. **NO CHANGES OR CANCELLATIONS MAY BE MADE AFTER FALL/SPRING BREAKS.** (Exceptions must be approved by the Dining Services Administrator.) All changes and cancellations must be made in the Meal Plans, 49er Card and Insurance Office, 148 Auxiliary Services Building.

Resident students in apartments and commuter students may purchase any of the Traditional or Declining Balance Meal Plans. Students may also elect to purchase Optional Dining Account in the Dining Services/ID Office, located in the Cone University Center, or in the Meal Plans, 49er Card and Insurance Office, located in the Auxiliary Services Building, by using credit cards, checks or cash.

Anyone may purchase individual meals at either of the boarding cafeterias (RDH and Crossroads Café) using cash, Declining Balance, Optional Dining Account, or 49er Account. Vending machines are located throughout the campus and several locations have microwave ovens for heating items. Students applying for on-campus housing may also apply for their meal plan at the Housing web site online at www.housing.uncc.edu/assignments.

Parking and Transportation

www.parking.uncc.edu

Parking is the responsibility of Parking & Transportation Services, located in the Facilities Operations/Parking Services Building (#23 on the campus map). Parking on campus requires the purchase and display of a University parking permit or payment at meters or in the visitor decks. Night Permits for evening-only students are available by the semester or by the year. Permits do not guarantee a parking space will be available, nor do they reserve a specific parking space, lot or deck. Copies of the *Campus Parking Rules and Information* are available from the Parking & Transportation Services office and online. For information on fees for motor vehicle registration and parking, see the section on *Financial Information* in this *Catalog*.

Campus Shuttle Transportation began in 2006 and is

available Monday – Thursday from 7:30 a.m. to 10 p.m. and Fridays from 7:30 a.m. to 6 p.m. when classes are in session. Buses are provided by Parking & Transportation Services through the Charlotte Area Transit System (CATS) and run to all areas of campus to provide safe, reliable transportation from residence halls and parking lots to academic buildings and campus services. Schedules and maps are available online at www.parking.uncc.edu. For additional information please contact the Parking & Transportation Services Office at 704-687-4285.

The **Charlotte Transit System** (CATS) provides bus transportation from the Square in Uptown Charlotte and from Southpark (via Eastland Mall and the apartment complexes along Barrington Drive, Routes 29 & 39). Service is provided on a regular schedule connecting with established routes throughout the city. Brochures containing detailed information regarding routes, schedules, and fees may be obtained in the Parking & Transportation Services Office, or by calling the Charlotte Transit Authority at 704- 336-3366. Fees are set by Charlotte Transit and are subject to change.

Safety

www.police.uncc.edu

Police and Public Safety services to the University community are provided 24 hours a day, seven days a week. University Police Officers are sworn, North Carolina State Certified Law Enforcement Officers.

The Administrative Offices of Police and Public Safety are located at the new Facilities Management and Police Building on Cameron Boulevard near Mary Alexander Road; the Police Telecommunication Center is still at its existing location in the King Building on campus. This agency is responsible for crime prevention, enforcement of laws and regulations, protection of life and property, preservation of peace, apprehension of criminals, and Lost and Found property.

Nearly 200 emergency "Blue Light" telephones are located throughout the campus to report suspicious activities, to summon police or medical assistance, and to request safety escorts (available 24 hours a day). Additionally, departmental representatives can conduct personal safety presentations to various audience sizes and are interested in working with students on academic, civic, and other projects related to law enforcement and community concerns.

Occupational Safety and Health, Accident Prevention, Life Safety, and Workers' Compensation are the concerns of the **Safety and Environmental Health Office** in the Department of Human Resources. It is the responsibility of this office to promote occupational safety and environmental health on campus, investigate accidents, conduct safety inspections of all facilities and operations, maintain all reports required by the N.C. Department of Labor, and generally work to reduce the risks of illness or injury in the University community.

Educational Services

LIBRARY

www.library.uncc.edu

The J. Murrey Atkins Library, located near the center of the campus, is a state-of-the-art facility that houses a collection that includes one million bound volumes and extensive education, audiovisual, document and microform collections. Some highlights include:

- Member of ASERL (the Association of Southeastern Research Libraries).
- **Largest research library** in the Southern Piedmont region.
- **One million volumes** and one million microfilm/fiche.
- Approximately 250,000 volumes circulate each year.
- Current subscriptions include **33,000 periodicals**, most accessible electronically.
- Nearly one million patrons annually enter its doors.
- State-of-the-art information technology includes **wireless network** and **250 public computer stations**.
- Over **50 wireless laptops** available to use both in and out of the building.
- **Live online help** with Ask-A-Librarian service.
- **Library instruction facilities** include several electronic presentation and computer equipped classrooms.
- U.S. Government Depository receives 70% of government publications.
- U.S. Patent and Trademark Depository Library.
- NASA Educational Resource Center for Teachers.
- Houses **Curriculum Instructional Materials Collection** (CIMC).

- **Information Commons** supports research, presentation, production, instruction, and individual and small-group study.
- **Special Collections** includes rare books and manuscripts, oral, photographic and written materials related to the history of the greater Charlotte region and the University archives.
- **Xerox copy center**, the Faculty Center for Teaching and e-Learning (FCTeL) and Information & Technology Services (ITS) are located in the Library building.
- Displays of university-owned art, historical materials, and memorabilia.
- **Full-time security staff** and electronic monitoring.

COMPUTING

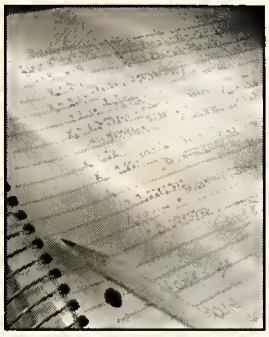
www.labs.uncc.edu

Information and Technology Services (ITS) manages the campus voice and data networks, centralized servers, University-owned PCs, operating systems, and software to support teaching and learning, research and business processes. The campus has a robust data network that connects over 500 servers and approximately 6000 computers. Forty-five percent of the campus features wireless network access. ITS maintains and supports the University's core administrative systems, performs application development, and administers and supports all of the University's central server resources. ITS provides development, consulting, and support services for the University web presence, its portal (49er Express), the University's e-learning system, and facilities and services in support of the University's research mission.

Student Computing is a unit within Information and Technology Services that works to ensure that students have access to computer equipment, software, and information needed to support their general academic efforts at the University of North Carolina at Charlotte. Student Computing manages the general-use computer labs in Barnard Computer Commons which are open 24/7. The labs house over 130 Internet-connected computers which provide access to email, network disk space, and a variety of application programs. All currently enrolled students are provided an email account, 49er Express account, and Novell account. Student Computing provides technical support through the Technical Support Center in Barnard, an online helpdesk tool located at http://helpdesk.uncc.edu, and via the student helpline at 704-687-6400. Visit www.labs.uncc.edu for more information.

WRITING

Through the **Writing Resources Center (WRC)**, assistance is provided primarily for undergraduates and graduate students who want to become more effective writers. The center is staffed by graduate and undergraduate writing consultants who work with writers at all stages of the writing process: prewriting, focusing, organizing, revising, and editing. Programs include one-on-one and group consulting; online writing consultants for distance education students; classroom presentations; and library and internet research.



The Writing Project (WP) focuses on developing K-12 writing teachers using three interconnected components that are based on the National Writing Project model: 1) the summer invitational institute, 2) continuity programs for teacher consultants in the project, and 3) inservice programs with local school districts. The WP offers inservice teacher educataion as well as opportunities for K-12 teachers to conduct classroom-based research. Working in conjunction with the College of Education, the WP provides leadership in teacher education.

ATHLETIC SERVICES

The Charlotte 49ers Athletic Academic Center provides assistance to all Charlotte varsity student-athletes to achieve academic and personal success at the University by providing support services designed to meet their unique needs and insuring the student athlete's compliance with all National Collegiate Athletic Association, Atlantic 10 Conference and University regulations. Academic advisors provide academic advising services, priority registration, tutorial services, supervised study sessions, a computer lab, résumé writing assistance, a life skills program, and academic recognition.

CONTINUING EDUCATION

The Office of Continuing Education, Distance Education/Extension, and Summer Programs. Recognizing that learning must be a lifelong activity, the University provides opportunities for adults to pursue their continuing education through degree-related studies and special non-credit programs.

Non-credit short courses, seminars, workshops, and conferences for adults are offered through *Continuing Education*. Specific programs are provided each year for the continuing professional education of accountants, architects, managers in the public and private sectors, engineers, psychotherapists and counselors, teachers

and other school personnel, and information specialists. UNC Charlotte also offers special lectures and forums in the arts, sciences, humanities, and public policy for the personal enrichment of all interested citizens.

Through *Distance Education/Extension*, courses for academic credit are offered at off-campus sites to serve citizens who live beyond easy commuting distance from the campus. Options for delivery include sending a UNC Charlotte faculty member to an off-campus location to teach a course in person, using one of two state-wide interactive video networks to link a UNC Charlotte faculty member on the campus in Charlotte with students attending class at remote locations throughout the state, and delivering courses online via the Internet. In addition, the University has the ability to deliver educational programming over Cable Channel 22, which is the channel reserved for the University by the local cable service.

During the summer, the office schedules a variety of credit and non-credit programs, including academic enrichment camps for youth, on the campus and at approved off-campus sites.

Contact the Office of Continuing Education, Distance Education/Extension, and Summer Programs at 704-687-8900 or visit www.ceesp.uncc.edu for specific information about the programs offered.

The **Office of Adult Students and Evening Services (OASES)** serves as a principal resource for adult and nontraditional students. Services include general education advising and referrals, acceptance of tuition payments, and assistance with forms and parking requests. Students can pick up and/or drop off information to be delivered the next day. OASES offers extended hours to serve students in Barnard 106 from 8 a.m. to 7 p.m., Monday through Thursday; 8 a.m. to 5 p.m. on Friday; and 9 a.m. to 1 p.m. on Saturday. Programs include re-entry open houses, orientations, adult student scholarships, the Alpha Sigma Lambda Honor Society, the Non-Traditional Student Organization (NTSO), the Adult Mentoring Program for Students (AMPS), and the 49er Finish Program. Visit www.oases.uncc.edu or call 704-687-2596 for more detailed information.

Academic Services

www.academicservices.uncc.edu

The **Academic Services** organization at UNC Charlotte enriches the academic community by offering a broad range of initiatives promoting student success, ensuring access, and enhancing the educational experience of all students. Through transition programs, learning communities, career services, experiential learning, university-wide honors, disability services, tutorial programs, and initiatives for underrepresented students, Academic Services cultivates life skills critical to successful graduation and global citizenship. Addressing the needs of a diverse student population, Academic Services utilizes an integrated student-centered approach which reinforces rigorous academic expectations and encourages student engagement from the time of enrollment through graduation.

ACADEMIC INITIATIVES FOR MENTORING STUDENTS

www.aims.uncc.edu

The office of Academic Initiatives for Mentoring Students (AIMS) is committed to providing quality academic support services that foster the recruitment, retention and graduation of all students, especially underrepresented students at UNC Charlotte. AIMS provides advising primarily to freshmen, sophomores, and transfers through structured programs. In addition, AIMS offers support for students interested in reaching the doctoral level of study.

University Transition Opportunities Program (UTOP). UTOP is a summer academic program designed to facilitate the transition from high school to the University for students from typically underrepresented populations by involving a limited number of incoming freshmen in a rigorous collegiate experience prior to fall semester enrollment. Seven hours of credit are awarded for successful completion of UTOP coursework, which consists of English Composition, Supplemental English, and Freshman Seminar. These students have the option of participating in a one-year Learning Community in which students are engaged in coursework and activities that emphasize liberal arts education and diversity, campus connections, and growth and development. Participants continue to enroll in classes together and share living/learning environments during the fall and spring semesters.

Student Advising for Freshman Excellence (SAFE). The goal of SAFE is to facilitate the transition from high

school to college of all incoming underrepresented freshmen. Through orientation sessions, academic advising, academic issues workshops, mid-semester evaluations, student advising, individual and group tutoring, co-curricular and social activities, and weekly meetings with student counselors, SAFE empowers students to acquire the skills necessary for academic success and the establishment of rewarding careers. Some students are eligible to participate during the sophomore year.

Transfer Resources for Advancing the College Experience (TRACE). TRACE assists transfer students from underrepresented populations in making a smooth transition into UNC Charlotte by identifying campus resources, providing academic support, and acting as advocates. The TRACE program provides services related to orientation, retention, career advisement, academic advising, and learning assistance.

Producing Readiness of Diverse University Cohorts in Education (PRODUCE). UNC Charlotte is one of the eight schools in the University of North Carolina system that has received a Louis Stokes Alliance for Minority Participation (LSAMP) National Science Foundation Grant to: (1) improve the quality of the learning environment for underrepresented students in science, mathematics, engineering and engineering technology; (2) increase the number of underrepresented students graduating with degrees in science, mathematics, engineering and engineering technology; and (3) develop and implement effective techniques of attracting talented underrepresented students who would otherwise not choose science or engineering as a career. PRODUCE participants receive faculty and peer mentoring, peer tutoring, opportunities to attend professional meetings/conference, internships, and scholarships.

Bridge to the Doctorate (BTD). The Bridge to the Doctorate Program funded by a grant from the National Science Foundation, seeks to broaden the participation of underrepresented students in science, technology, engineering and mathematics (STEM). It provides tuition and fees, health insurance, and a stipend for a selected number of underrepresented students in STEM graduate programs. In addition, the program participants receive advising and mentoring from graduate faculty, opportunities to conduct and present scholarly research, and attend professional meetings and workshops.

A related yet independent program from AIMS is the **Ronald E. McNair Post-Baccalaureate Achievement Program.** This federally supported program is designed to increase the number of low-income and first-generation college students who earn doctoral degrees and teach in colleges and universities. Participants are usually juniors and seniors who work with faculty mentors on research projects and attend other scholarly activities related to pursuing a graduate education. The intent of the program is to introduce students to the rigors of graduate study. Additional details about the program can be found online at www.mcnair.uncc.edu.

DISABILITY SERVICES

www.ds.uncc.edu

The Office of Disability Services works with departments across UNC Charlotte to ensure that educational programs and campus facilities are accessible to individuals with disabilities. Disability Services counselors meet with qualified students to determine and provide reasonable and appropriate accommodations that support the student's educational goals.

Assistive technology is available to students with disabilities in the Office of Disability Services, centralized computer labs, Atkins Library, and in other departments on campus. Service animals assisting individuals with disabilities are permitted to all facilities on campus. Prescriptive devices, devices of a personal nature, or personal attendant care are the responsibility of the student. Specific accommodation questions should be directed to a Disability Services counselor.

The Office of Disability Services supports a culturally rich, inclusive, and accessible campus environment by providing disability related education and consultation to faculty, staff, and the community.

HONORS COLLEGE

www.honorscollege.uncc.edu

The Honors College at UNC Charlotte offers academically talented, enthusiastic, motivated students many of the personal and intellectual advantages of a small liberal arts college within the diversity of a large university. The emphasis is on seminars, intensive reading, writing, and discussion in which reasoned self-expression and critical thinking are valued and rewarded. The Honors College is comprised of several distinct programs, each with its own standards for admission and requirements for graduation. Unique enrichment opportunities; including scholarships, study abroad, community service, executive shadowing, special lectures, and individualized senior projects are also available. Some exceptionally talented students are enrolled in more than one program. An honors residence option is also available for all students in the Honors College.

The **Business Honors Program** (BHP) provides students with access to a range of opportunities designed to stimulate their thinking and broaden their exposure to topics related to business issues.

Students majoring in the Belk College of Business must complete an *Application for Admission* to the Business Honors Program and conduct an interview with the Director or Assistant Director. Admission to the program is based on the student's demonstrated Honors potential (determined by examining GPA, SAT scores,

courses completed, academic and other distinctions, and other factors) and availability of space in the program. If the GPA of a student admitted to the program drops below that required for graduation for two successive semesters, the student will be dismissed from the program.

Students in the Business Honors Program must complete a minimum of 18 semester hours including BUSN 3780 and 3790, nine hours in business honors sections, and three hours from the University Honors Program. Once students are admitted to Business Honors they are required to complete all business honors sections offered unless they receive permission from the Assistant Director of the Business Honors Program. Honors courses cannot be repeated.

Students in the Business Honors Program are required to participate in a minimum of 50% of the extra-curricular activities and events offered by the Program during the academic year.

To graduate with "Honors in Business," a student must complete the required Honors courses, submit an application for Honors Candidacy at least two semesters prior to graduation, receive a grade of A in BUSN 3790, and present a GPA of at least 3.3 overall and 3.3 in all Honors courses for which a grade was assigned.

The **North Carolina Teaching Fellows Program** provides $26,000 four-year scholarships annually to 500 high school seniors from across the state. In turn, students must participate in a rigorous and unique four-year teacher preparation program and teach for four years in the public schools of North Carolina. At UNC Charlotte, the NC Teaching Fellows Program fosters scholastic achievement and professional leadership through personal attention and enrichment experiences. Teaching Fellows participate in special activities to complement their involvement in the regular teacher education program. UNC Charlotte's Teaching Fellows Program features a variety of exciting enrichment experiences such as activities designed to build leadership activities, retreats focused on interpersonal and team building skills, weekly seminars on relevant and timely educational issues and trends, cultural events, community service projects, multicultural/diversity activities, opportunities to participate in the University Honors Program, and early and continuous field experiences in NC public schools. NC Teaching Fellows at UNC Charlotte also benefit from the special guidance of a full-time campus director, an academic advisor, and faculty members in the Colleges of Education and Arts and Sciences. Teaching Fellows are housed in the Honors residence hall and receive priority registration. For more information, visit online at http://education.uncc.edu/tfellows.

The University Honors Program. Open to talented and highly motivated students of all majors, the University Honors Program (UHP) is designed to challenge and broaden the intellectual growth of UNC Charlotte's most gifted students. The purpose of the University Honors Program curriculum is to provide intellectual excitement for students, to complement traditional disciplinary learning, to encourage concerned, globally-aware citizenship, and to provide a unique social and intellectual mix for both students and faculty. Interdisciplinary courses fit the theme, *"Issues for Human Survival in the 21st Century,"* and are designed to confront political, religious, economic, ecological, gender, race, justice, and human rights related issues and their impact on the global community and the human condition. Through its core courses, cultural enrichment opportunities, a strong commitment to citizenship and service, and an individually designed senior project, honors students have a unique opportunity to customize their honors curriculum to meet their own specific goals. To stimulate discussion and faculty-student interaction, all University Honors Program classes are restricted to a small class size with program permission required for enrollment.

Any student accepted into the University may apply to the University Honors Program. Acceptance will be based upon documents which include: a two-page application essay stressing personal successes and goals, high school rank indicative of exceptional performance, acceptable SAT scores, and a letter of recommendation. A transcript may also be required.

Entering freshmen and continuing students seeking admission to the University Honors Program should review its web page and download an application at www.uhonors.uncc.edu. Admission to the University Honors Program is highly competitive, requiring evidence of a strong record of academic achievement, leadership and a commitment to community service.

To graduate with University Honors Distinction, students must satisfy the following requirements:

1.) Complete two courses selected from the following *designated honors* sections of the General Education Curriculum (6 hours):

- LBST 2101 (Hx) *Western Cultural and Historical Awareness* (Honors section)
- LBST 2102 (Hx) *Global and Intercultural Connections* (Honors section)
- LBST 2213 (Hx) S*cience, Technology and Society* (Honors section)

2.) Complete two University Honors Program designated 3000 level three-hour topics courses. (6 hours)

3.) Satisfy the University Honors Community Service requirement by completing either LBST 2215 *Citizenship,* or HONR 2750 *Community Service Practicum.* UHP students must complete 40 hours of community service.

4.) Satisfy the University Honors Enrichment Requirement by completing either LBST 1105 (Hx) *The*

Arts & Society or HONR 2701 *Enrichment Seminar.*

5.) Complete HONR 3790 *Honors Senior Project*, or an approved discipline-based honors thesis/project, with a grade of A.

6.) Have a minimum overall grade point average of 3.0 and a 3.2 grade point average in University Honors Program designated courses.

7.) Obtain the following endorsements:

- Approved Application for Graduation with University Honors Distinction
- Endorsement by the University Honors Program Director
- Endorsement by the University Honors Council

Honors sections for ENGL 1103 (Accelerated College Writing and Rhetoric) and HONR 1100 (Honors Freshman Seminar) are offered during the fall semester to orient entering freshmen to the philosophy and rigors of the University Honors Program. In addition, courses across a wide variety of disciplines, including Business, Architecture, Biology, Criminal Justice, Dance and Theatre, History, English, Philosophy, and Political Science, are offered to University Honors Program students on a demand basis and may be used to satisfy the University Honors Program course requirements. In every case, University Honors Program courses include strong humanities components.

University Honors Program students are encouraged to live in the Honors College Residence, located on the third floor of Witherspoon Hall, which provides an environment especially conducive to study and cooperative learning. The commons area of this floor contains a study/classroom area where honors classes may meet.

The University Honors Program, in cooperation with the Education Abroad Program, also promotes a comprehensive study abroad program, emphasizing diversity, choice, and flexibility. Some study abroad opportunities are interwoven with specially designed honors classes, while others are combined with the community service aspect of the program. Although study abroad is not required, it is strongly encouraged.

Students in the program are also part of the University Honors Program Student Association. The student-led organization organizes social events, special discussions, student mentoring, and community service projects. All UHP students are expected to attend meetings and participate in community service projects each semester in order to remain in good standing.

Academic Department Honors Program. Many academic departments also have honors programs permitting students to graduate with honors in their academic discipline. In some cases, graduation with honors within an academic discipline can be combined and coordinated with graduation with University Honors distinction. Academic departments that have honors programs include: Anthropology, Art, Biology, Chemistry, Criminal Justice, Geography and Earth Sciences, History, Languages and Culture Studies, Latin American Studies, Mathematics and Statistics, Philosophy, Physics and Optical Science, Political Science, and Psychology. Information on how to apply and graduate with honors in a specific academic discipline can be found in this *Catalog* under each academic discipline with an honors program. In general, discipline-based honors programs are open only to students with junior or senior standing.

UNC in DC Program. Jointly administered through the Honors College and the University Career Center, the UNC in Washington Program provides an opportunity for upper-level students from any major to work and study in Washington, D.C. For details, please see the "University Career Center" section in the following pages.

Pre-Healthcare and Pre-Medical School Advising. The Honors College maintains a proactive pre-health advising office to serve undergraduates seeking careers in a variety of health care professions, including, but not limited to: medicine, physical therapy, pharmacy, veterinary medicine, optometry, dentistry, occupational therapy, podiatry, and chiropractic medicine. For details, please see the "Preparation for Professional Schools" heading later in this section.

Scholarships for Advanced Undergraduate and Graduate Study. The Honors College coordinates applications for many national scholarships for advanced undergraduate and graduate study. These scholarships, including the Rhodes, the Marshall, The James Madison, The Barry M. Goldwater, the Jack Kent Cooke, the Phi Kappa Phi, and National Science Foundation Fellowships require extensive application procedures and are only awarded to the most outstanding applicants. Only students with exemplary academic records—combined with service and leadership—qualify for these highly selective graduate and, in some cases, advanced undergraduate awards. Most also require an on-campus review and institutional endorsement of completed applications.

STUDENT SUCCESS AND RETENTION

www.ossr.uncc.edu

The Office of Student Success and Retention is a multi-function office that works across both Academic Affairs and Student Affairs. The office provides consulting, resource materials and other support services to assist in the development and implementation of programs/initiatives designed to enhance student success and retention. The office provides assistance in the development of assessment plans for student success and retention programs and works with the Associate Vice Chancellor for Student Affairs and the Director of Assessment to track and analyze campus-wide student success and retention data. The office promotes awareness about campus-wide student success and retention programs among current and prospective students, the campus community, and the region. Additionally, this office

coordinates the Learning Community programs and works with the Freshman Seminar program.

Learning Communities are small groups of students and faculty who work closely together creating a "community of learners." Many of our programs are residential while other communities are geared toward commuter students. In either situation, Learning Community students have the opportunity to quickly make friends and develop a close relationship with UNC Charlotte faculty and staff.

The supportive environment created in the Learning Communities brings students, faculty, staff, and peer mentors together with the common goal of promoting academic and social success. Communities are offered in various academic areas giving participants the opportunity to explore their interests while working in small, comfortable groups on course-related projects.

Freshman Seminars (ARSC 1000) have been offered for more than 10 years, with approximately 30 sections of the course being offered each fall. A diverse group of instructors, including Student Affairs professionals and faculty from a wide range of disciplines, teaches the course. Some sections are dedicated to specific student populations (e.g., athletes, participants in learning communities, and discipline-specific areas), but most sections are open to any new student. ARSC 1000 counts as a general elective course. The University has recently begun offering some sections in the spring semester as well.

This course is designed to help students be successful in college, specifically at UNC Charlotte. It provides information and tools to help students gain a better awareness of campus resources and services, encourages connecting to the university community, and enhances strategies for successful academic and personal growth. Throughout the course, students are encouraged to be reflective in identifying personal strengths and weaknesses and to place emphasis on team-building with fellow students.

UNIVERSITY CAREER CENTER

www.career.uncc.edu

The **University Career Center (UCC)** offers comprehensive career services designed to assist undergraduate and graduate students in all stages of career development: career decision making, career planning, career employment, and reassessment. Experiential learning (EL) is a key component and all students are encouraged to take advantage of internship, cooperative education, 49ership, and other career exploration programs. With the UCC acting as the coordinating and academic support unit for experiential learning, 60-70 percent of all students at UNC Charlotte participate in a U niversity-sanctioned career-related experience. The Center has over 90,000 student contacts annually but still offers nine personalized Career Coaches and Advisors (and four Peer Career Assistants) who serve as liaisons to each major and the university advising center for student one-on-one meetings.

The goals of the UCC are: (1) to help all students make and act on career decisions that maximize their potential and long-term development; to enable the timely involvement of students in experiential learning programs; (2) to engage students, faculty, and employers in quality experiential learning programs; and (3) to promote receptivity to and involvement with UNC Charlotte, the colleges, and the students among individuals and organizations outside the University. The UCC serves over 7,000 area and national employers, and also has developed co-op and 49ership programs abroad. Over 50,000 jobs and internships are handled through the office each year.

Services provided by the UCC range from individual career counseling and advising; résumé and cover letter critiques; and videotaped, mock interviews; to small group workshops on such topics as résumé writing, effective interviewing, uncovering the hidden job market, and transitioning from college to the workplace. Other services include résumé referrals to employers, on-campus interviewing, career exploration through various experiential learning programs such as Discover and Career Prospector, career inventories and personal assessments, a career resources library collection, and ten major job fairs annually, including the Public Services Fair and Career Expo. The majority of services can be accessed online at www.career.uncc.edu; through the "My Future" section on the 49er Express at www.express.uncc.edu; or by registering in Campus Professional, an online database maintained by the UCC. Online UCC links such as Career Search, Vault, Career Spots, Optimal Résumé, Video Bibliographies, CareerBuilder, and E-leads are added career information tools for students. A newsletter is published each semester to inform students about workshops, programs, and employers recruiting on campus. Students are encouraged to visit the UCC and to start their experiential learning program and career planning in their freshman year or first semester at the University. The UCC has received national recognition for its "state-of-the-art" program initiatives.

Career Decision Making (PSYC 2170) is co-taught by Psychology professors and University Career Center counselors. This course helps students examine the working world in terms of labor trends, the global economy, cultures, and current work-related societal issues. Students are guided through in-depth processes and a model to examine where their skills, values, and abilities would best fit, given a better understanding of organizations and workplace expectations. Major

theoretical foundations of career development (Super, Holland) and experiential learning (Dewey, Lewin, Argyvis, and Schon) and an emphasis upon engagement in EL programs are incorporated into this course. Assignments feature career research and culture analysis, personal assessments, written and oral communications, strategic development, and individual career action planning. Sophomores taking this course will be better prepared to maximize an experiential learning educational opportunity, make career decisions, understand work cultures they enter, and develop leadership and service skills.

Part-Time Employment On-Campus. Offered by the Department of Human Resources at UNC Charlotte, the Student Employment Office (200-A King Building) assists students in locating on-campus employment opportunities. The University participates in the federal Work-Study Program and attempts to match students with jobs related to their academic interests. Students are encouraged to limit employment to no more than 20 hours per week to allow for success in a full 15-18 hour course load each semester. More information, including job openings, can be found online at www.hr.uncc.edu/students.htm.

Part-Time Employment Off-Campus. The UCC's Job Location and Development (JLD) Program assists students in obtaining part-time, summer, and temporary employment off-campus. Some full-time jobs that do not require a degree are also listed. Job listings may be viewed online to registered students in Campus Professional.

Jobs may include career-related positions in various fields such as education, business, entertainment, engineering, graphic design, and healthcare. The JLD Program is available to help students to earn money for their academic and personal expenses during their enrollment at the University.

Experiential Learning Programs. The majority of UNC Charlotte students are expected to and do participate in University-sanctioned experiential learning programs (60-70%). Opportunities are available for both undergraduate and graduate students to receive course credit, transcript notation, or other recognition for supervised experiences in public and private agencies within the community, nationally, and internationally. These opportunities are offered through experiential learning programs including over 491 courses involving clinicals, cooperative education, internships, 49erships, and practicums. The University Career Center (UCC) is the central coordination office for most experiential learning opportunities for the campus and can provide information about the following options:

Cooperative Education. This career related professional program is available to students in the Colleges of Arts and Sciences, Business, Computing and Informatics, and Engineering. Participants must have a GPA of at least 2.5 (Master's level graduate students must maintain a minimum GPA of 3.0) and complete course requirements specified by their department. Transfer students must complete 12 hours at UNC Charlotte before applying to the program. Co-op students work two to three semesters either part-time or full-time (depending on college requirements) with an employer in a paid work experience. Although the experience does not offer academic credit, participants are classified as full-time students and receive transcript notation.

Internships. Internship programs provide an introduction to career options in a professionally related work experience which enables the student to apply classroom learning. This experience is usually unpaid and may offer academic credit if there is appropriate faculty supervision. Students work 8 to 12 hours a week while also taking classes. Students are encouraged to check with their academic department for further information and academic eligibility requirements.

The 49ership Program. The University Career Center sponsors a non-credit internship called a 49ership. Program participation is especially valuable for students who want career experience and do not have an internship option through their academic major. Students may participate in the program after their freshman year provided they have a GPA of 2.0 or better; graduate students must complete nine credit hours in their graduate program before making application and have a GPA of 3.0 or better. (Transfer students must successfully complete 12 credit hours at UNC Charlotte before making application.) A minimum of 80 work hours for one semester is required to complete the program. Fall and Spring 49erships are part-time. Summer 49erships may be full- or part-time. Full-time students who are in good University standing, have completed their freshman year, and have a 2.0 minimum cumulative GPA are eligible (Master's level graduate students must have a 3.0 minimum cumulative GPA to be eligible). While it does not offer academic credit, it is noted on the student's transcript, and students pay a course registration fee. Approval for enrollment must be arranged before the student begins the work experience. Participating employers have included Carolinas Medical Center, the District Attorney's Office, General Electric, Walt Disney World Co., Duke Energy, Vanguard, Transamerica, and Crisis Assistance Ministries. Seventy percent (70%) of the positions in this program are compensated.

UNC in DC Internships through the UNC in Washington Semester Study and Intern Program. Students have the opportunity to study, live and work with 42 other students from 14 different UNC campuses. Three to five students from each campus are selected through a competitive process. Students spend up to 32 hours per week in internships throughout a semester and are matched with supervisors who will integrate them into the daily operation of the organization and help them define research projects and special assignments of importance to the organization. Internships often result in tangible

products such as briefings, research memos, policy analyses, and working papers, as well as other valuable career related experiences. Final sites are arranged through the director of the UNC in Washington program in coordination with the University Career Center (UCC) and the Honors College. Past sites range from the White House, to Hospice and Palliative Care National Association, to Senator Obama's office, to the Pentagon. In addition to internships, students participate in an Honors Course on the *Washington Experience,* as well as take an independent study. Contact the UCC for more information on application materials and deadlines. Students of any major who will be juniors or seniors during UNC in DC participation are eligible to apply. 12-15 credits are earned for Fall and Spring semesters, and 9-12 credits are earned in the Summer. Students are also eligible to apply for one of six hundred $1000 scholarships for the programs in which an Ethics Independent Study project is required.

Internships in London through the North Carolina Partnership. The Office of Education Abroad offers opportunities for students to engage in valuable internships with London organizations during an 8 week period. 35 hours a week in the summer. Ziff Davis, the Royal Philharmonic Orchestra, The British Museum, and Devonshire Hospital are example sites. Upon completion, students earn 3 credits. Interested students can learn more through the Office of International Programs or the University Career Center.

Service Learning Opportunities through the University Career Center. Service Learning opportunities include 49erships in non-profit and government agencies and organizations, enabling students to gain career-related and community service experience while learning about related social, civic, human service, and political issues. Students work a minimum of 80 hours per semester to complete the program. Fall and spring 49erships are part-time, and summer 49erships may be full- or part-time. Students must complete their first 30 credit hours at UNC Charlotte (transfer students must complete a minimum of 12 credit hours), maintain a minimum overall GPA of 2.0 (Master's level graduate students must maintain a minimum of 3.0), and be a full-time enrolled student in good University standing in order to be eligible. Students pay a course registration fee for transcript notation. Employers (as well as career advisors) assist students in working toward learning objectives and will complete an evaluation on each student at the end of each term. Students receive transcript notation, but not academic credit.

The Career Prospector Program. This program involves "shadowing" professionals in various career fields, many of whom are alumni, parents, and area managers. Students are able to explore career options and academic interests by conducting informational interviews and observing professionals in the career fields of their choice. The shadowing experiences can last for one day or longer, depending on the schedules of the students and sponsors. Over 300 sponsors in various career fields participate in this program coordinated through the University Career Center.

UNIVERSITY CENTER FOR ACADEMIC EXCELLENCE

www.ucae.uncc.edu

Designed to improve academic performance and foster meaningful learning experiences, the University Center for Academic Excellence provides services, programs, and materials to help students develop and refine thinking skills, utilize self-management skills, and learn course material more quickly and thoroughly while earning higher grades. Services include: (1) individual consultations regarding academic concerns; (2) diagnostic assessment of learning styles and study habits/attitudes; (3) computer-assisted instruction for a variety of course subjects; (4) "Study Smarter" workshops; and (5) a library of materials with books, DVDs, video tapes, and printed handouts outlining successful study/learning strategies.

Tutorial Services. Well-trained undergraduate and graduate students provide free tutoring to University students in a variety of disciplines. Tutoring is primarily in mathematic, sciences, business, and foreign languages and emphasizes both content mastery and learning skills development. Tutors are selected based on their competence in the subject area and their effective interpersonal skills. Tutorial Services at UNC Charlotte is nationally certified through the College Reading and Learning Association, Level II.

Supplemental Instruction. Supplemental Instruction (SI) assists students in historically difficult courses, including biology, chemistry, physics, communication studies, engineering, mathematics, and business. In regularly scheduled group study sessions, trained SI Leaders help students refine the unique skills necessary for doing well in the target course. Students regularly participating in SI average one-half letter grade or higher on final course grades than non-participants.

Structured Study Groups. Structured Study Groups (SSF) is a study system in which students from the same class work together in small groups of 4-6 members to reinforce material presented in class. The staff assists students in forming groups with the support of faculty. SSG encourages students to collaborate on common classroom tasks for deeper understanding of course material. The goal of is to have each student commit to the "pursuit and ownership" of learning to achieve personal and academic success.

The Office of Building Educational Strengths and Talents (B.E.S.T.). B.E.S.T. is a federally funded academic support program that provides intensive

educational and post-baccalaureate advising, tutorial assistance, and exposure to diverse cultural opportunities to first-generation college students. The program is charged with introducing those students, as well as other select populations with lower retention and graduation rates, to the customs of higher education. To further facilitate the success of entering freshmen, the program sponsors both an early arrival program and a Freshman Learning Community.

Preparation for Professional Schools

Students may begin preparation at UNC Charlotte for a number of professional careers. Depending upon the professional school's requirements, the student may wish to take a degree at UNC Charlotte or to transfer after one, two, or three years.

Preparation for the following programs is offered: chemical engineering, law, and medical technology. Preparation for health professions includes dentistry, medicine, optometry, pharmacy, physical therapy, physician assistant, and veterinary medicine.

The student who plans to enter a professional school is advised to plan his/her program so that general requirements for the bachelor of arts or bachelor of science degree are met in addition to the requirements for the professional program being considered. The student planning to attend a professional school should inform his/her advisor of his/her plans. The student should become familiar with the requirements of the school that he/she plans to attend. **That school, not UNC Charlotte, will determine which UNC Charlotte credits will be accepted for transfer**.

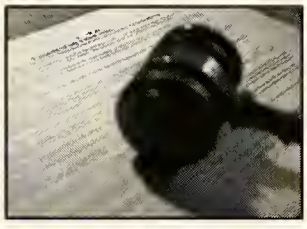
Graduate and professional school entrance requires an extensive commitment and focused career choice. Certain careers required an advanced degree, and the University Career Center (UCC) can help students identify what kind of graduate study will best prepare them for the specific career of interest. The UCC offers a workshop entitled "Graduate & Professional School Searches and Your Career," along with resources on careers in many areas of study. In addition, the career resource collection in the office contains information on preparing for the professional exams, backgrounds on the schools offering programs, and in-depth career information. Résumé critique sessions and mock interviews offered by the Center can also be geared toward graduate school admissions, based on student need. The UCC hosts a Career Expo which includes several graduate and professional school representatives seeking to attract UNC Charlotte students. Lastly, the UCC maintains lists of what graduate and professional schools past graduates have been admitted to or attended.

It is important to note that there are more application requirements for professional/graduate schools than for undergraduate schools. Application is often an extensive and in-depth process. The UCC can help you plan the applications and career development processes, which includes prior exploration of medicine, law, and various careers requiring advanced degrees through job shadowing, self assessment, career research, and internships.

The Office of Continuing Education currently offers fee-based programs that help students prepare to take the GRE and GMAT exams. Under consideration for the future is a program to help prepare students for the LSAT.

Chemical Engineering. Students seeking a program in chemical engineering should consult the Department of Chemistry for advice concerning available options. However, those students wishing to obtain the Bachelor of Science in Chemical Engineering degree may do so by transferring to North Carolina State University after spending two years at UNC Charlotte. To be eligible for such transfer, the student must meet the admissions requirements for transfer at North Carolina State University. After transfer, an additional two years normally will be required for the degree.

Law. The University suggests that the student planning to enter law school consider courses in such areas as accounting, business administration, business law, communications, criminal justice, debating, drama, economics, English literature and composition, finance, history, logic and ethics, mathematics, modern languages, philosophy, political science, psychology, sociology, and statistics. Preparation should include comprehension of and expression in words, the development of a critical understanding of human institutions and values, the generation of a creative power in thinking, and a working knowledge of the use of the computer in modern society. Thus, any of a number of majors, with wisely selected electives, might provide the broad educational background needed.



Students planning to enter law school should contact the Department of Political Science for advising.

Pre-Law Society. The UNC Charlotte Pre-Law Society is a student pre-law organization. The Society carries on a large number of activities designed to help its members decide whether they wish to attend law school: providing sessions with pre-law advisors and attorneys; taking field trips to pre-law conferences, law schools, law offices and courts; having a guest speaker program on legal and judicial topics; and working on preparations for the LSAT. Membership in the Society is open to all UNC Charlotte students, regardless of major or year at

the University. For more information, contact the Department of Political Science.

Medical Technology. The University, through affiliation with several schools of medical technology, offers programs leading to baccalaureate degrees in biology and chemistry, with training in medical technology. Students interested in this four-year program should contact the Departments of Biology and Chemistry for advising.

Medicine and Dentistry. The basic requirements for entrance to most medical and dental schools in North Carolina, South Carolina, Georgia, Tennessee, and Virginia are as follows:

Biology	8 hours
General Chemistry	8 hours
Organic Chemistry	8 hours
Physics	8 hours
English	6 hours

Students should check with their school(s) of interest for specific requirements.

Please note that these are the common minimum requirements; additional courses may be required at the discretion of the professional school. Most students will need additional coursework and other activities to be competitive for admission. *It is essential that students intending to apply to medical or dental schools consult the Pre-Health Professions Advising Office (located in the Honors College) very early in their programs.*

Faculty Evaluation Committee for the Pre-Health Professions. The UNC Charlotte Pre-Health Professions Faculty Evaluation Committee consists of faculty members from the University and serves as the main recommending body for UNC Charlotte students seeking entrance to health professional careers. In order to obtain a recommendation to medical school or dental school from the committee, the student must schedule an appointment with the Pre-Health Professions Advising Office during Spring of the year in which applications are being made.

Students working toward entrance to health professional schools are advised to work closely with the Pre-Health Professions Advisor and faculty advisors in the Biology and Chemistry Departments throughout their study at UNC Charlotte. Additional information may be found at www.honorscollege.uncc.edu.

Allied Health Club. Students interested in health-related careers are encouraged to join the Allied Health Club. The organization sponsors speakers, volunteer opportunities in local hospitals, and trips to see admissions officers and teaching programs in schools throughout the region.

American Medical Students Association. Students may also join AMSA for additional contact with premedical peers. AMSA commonly hosts speakers and provides information about requirements, activities, and admission to medical schools. Information about this organization can be found at www.bioweb.uncc.edu/amsa.

Optometry. Currently, there are no schools of optometry in North Carolina. Each year, however, the State of North Carolina contracts 21 spaces in four out-of-state schools of optometry and partially subsidizes the tuition costs for the students that it selects to attend these schools. Information on these contract programs in Optometry may be obtained from the College Foundation of North Carolina at www.CFNC.org/contractprograms.

Students interested in pre-optometry preparation should contact the Pre-Health Professions Advising Office for advising.

Pharmacy. Students planning to seek a Pharmacy degree will spend at least two to three years at UNC Charlotte taking prerequisite courses, although most successful applicants have completed a baccalaureate degree. Students interested in pre-pharmacy preparation should contact the Pre-Health Professions Advising Office for advising and visit the pre-pharmacy advising website at www.honorscollege.uncc.edu for valuable information about general pre-requisite courses and links to different Pharmacy programs and their specific requirements.

Pre-Pharmacy Club. The UNC Charlotte Pre-Pharmacy Club is a student organization of undergraduates and post-baccalaureate students interested in attending pharmacy school. The club carries on a number of different activities to educate their members about the field of pharmacy and steps needed to gain admission to pharmacy schools. They also perform a variety of volunteer duties, visit pharmacy schools and bring in representatives of various pharmacy schools in North Carolina to speak to their members. The club is open to all UNC Charlotte students, regardless of major or year at the University. Information on this organization can be found at the club's website at www.sco.uncc.edu/prepharmacy.

Veterinary Medicine. Students should consult with the Pre-Health Professions Advising Office to determine which courses to take and which courses must be completed by the end of the fall semester in which a student applies for admission to a School of Veterinary Medicine. Students should also consult the school to which they plan to apply for details on courses and extracurricular activities that are required. Additional information of interest to pre-vet students is available at www.honorscollege.uncc.edu.

International Programs

www.oip.uncc.edu

The **Office of International Programs (OIP)** serves as a focal point for UNC Charlotte's international dimension by providing leadership and assistance in the areas of curriculum development, international student/scholar services, education abroad programming, overseas linkages, English language training, cross-cultural training, and community programming.

Various **Campus Events** are sponsored independently and in cooperation with other departments and agencies. They include the annual International Festival, dinners featuring specific cultures, the Education Abroad Fairs, Summer Institutes, International Women's Day and activities associated with the MU chapter of Phi Beta Delta Honor Society for International Scholars.

Public Service. The OIP seeks to initiate and respond to the international needs and interests of the community. Current programs include: (1) *Community Forums*--symposia on topics of current international interest; (2) *Great Decisions*--an annual series of lecture/discussions during the months of February and March on key policy issues; (3) *Cross-Cultural training*--individually designed workshops that focus on appreciation for other cultures and development of skills in effective communications across cultures.

Education Abroad. UNC Charlotte encourages its students to study or have an educational work experience in a foreign country as a part of their undergraduate or graduate careers. The Office of Education Abroad offers opportunities to study or work abroad for a year, a semester or a summer. Programs are available in countries virtually all over the world. A semester or year abroad need not cost much more than a semester or year at UNC Charlotte. Students may receive academic credit for all courses taken while overseas and intern or co-op credit for educational work experiences abroad. No time needs be lost toward graduating on schedule. For most programs, knowledge of a foreign language is not required to study or work abroad. UNC Charlotte has sent students from every college abroad. Students are encouraged to begin planning for study or work abroad while they are freshmen or sophomores. The study abroad experience may take place during the sophomore, junior, or senior year or during graduate study. Regular UNC Charlotte financial aid is often applicable to study abroad and scholarships are available. The Office of Education Abroad assists students in choosing and applying for the education abroad program. It also provides cross-cultural orientation and re-entry (to the United States) assistance.

UNC Charlotte is one of approximately 200 U.S. institutions of higher education which are members of the **International Student Exchange Program (ISEP)**. This program allows the UNC Charlotte student to exchange with students from Africa, Asia, Australia, Canada, Europe, and Latin America. The students pay their regular tuition, fees, room and board at UNC Charlotte and exchange places for the year with students from institutions outside the United States who have similarly covered their costs. The student is registered at the foreign institution, taking the same courses, having the same assignments and participating in the same activities as all other students at that institution. This program permits the student to be exposed daily to a different set of cultural values, to new ideas, and new world views. ISEP exchanges are small in scale, with only a few students going to each foreign institution.

Further information about the Education Abroad or International Student Exchange programs may be obtained from the Office of Education Abroad in the College of Health and Human Services Building and online at www.edabroad.uncc.edu.

The **International Student/Scholar Office** provides services in the areas of immigration, campus and community orientation, and cultural adjustment. The staff serves as a liaison to other campus offices on related matters and provides programs that enhance the student and scholar's learning experience including Conversation Partners, the Host Family Program, International Coffee Hour, advising of international student clubs, and cross-cultural training workshops.

The English Language Training Institute (ELTI) provides intensive English as a Second Language instruction for international students planning to attend American universities or colleges in the United States. ELTI holds three sessions per year--fall, spring, and summer--and offers up to seven language proficiency levels. Average class size is 12 students and students attend classes 20-24 hours per week. Exceptional students in Levels 6 and 7 are eligible to take University courses in addition to their English classes. ELTI also offers a communications course for international teaching assistants and consulting for international faculty at UNC Charlotte. For more information about the ELTI, contact the Office of International Programs.

Intercultural Outreach Programs offers custom-designed, short term training programs for international groups. These programs may include English language training, American cultural themes, specialized professional development in any field, site visits and internships in the community, and a variety of cultural experiences tailored to meet the objectives of the group.

The World Affairs Council of Charlotte (WACC) was founded in 1983 as an outreach program of UNC Charlotte and its Office of International Programs. By serving as a regional center for education and discussion of world affairs, WACC seeks to provide leadership for

global thinking, believing that a broad perspective is necessary for effective competition in the global economy and for responsible citizenship in an increasingly interdependent political world. The Charlotte Council recruits internationally renowned speakers to address topics ranging from economics to globalization to foreign policy. Previous speakers have included the President of Shell Oil Company, Mr. John Hofmeister; the Ambassador of France to the U.S., Jean-David Levitte; and President George W. Bush. Educational outreach programs have directly benefited over 700 teachers and almost 70,000 students. The WACC is a non-profit, non-partisan organization supported by funding from individual and corporate member dues, foundations, and contributions.

Research

www.research.uncc.edu

The **Office of the Vice Chancellor for Research and Federal Relations** provides direction and leadership for the development of research and creative activity at the University and the infrastructure that supports those activities. The Vice Chancellor coordinates federal and congressional relations and oversees four support offices, the Office of Proposal Development, the Office of Research Services, the Office of Technology Transfer and the University Vivarium. The President of the Ben Craig Center also reports to the Vice Chancellor.

The **Office of Proposal Development (OPD)** works closely with faculty and funding agencies to identify opportunities for proposal development, facilitate the formation of proposal teams, and provide a wide range of services to help faculty achieve their research goals, including identification of funding sources, general consultation on writing and funding strategies, and proposal editing.

The **Office of Research Services (ORS)** provides services for the review and submission of proposals to funding agencies, including the interpretation of guidelines, preparation of budgets, and mailing and tracking of proposals, as well as post-award management support. ORS coordinates research-support efforts with college research officers and is responsible for federal compliance.

The Office of Technology Transfer (OTT) provides services for the review, protection, and management of University-based intellectual property, and commercializes intellectual property through licensing services. OTT builds and maintains strategic partnerships with local and state-based economic development agencies; assists and mentors faculty and students with new business start-ups; provides outreach services in the areas of entrepreneurship, new business creation, intellectual property management, and venture capital financing; and acts as a conduit to industry for sponsored research and technology commercialization.

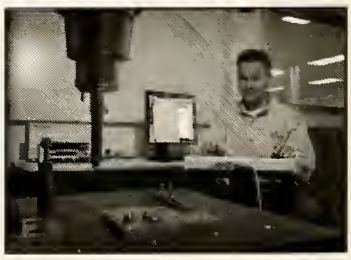
The Ben Craig Center, located in the University Research Park, is a non-profit incubator associated with UNC Charlotte. Its mission is to foster entrepreneurship in the Charlotte region. The Center accomplishes its mission by combining office infrastructure, consulting services, and a network of business contacts to create a program that accelerates a business' growth.

The Charlotte Research Institute (CRI) is the portal for business-university technology partnerships at UNC Charlotte. Building on the internationally known results of its research centers in Precision Metrology, eBusiness Technology, and Optoelectronics, the CRI supports new research ventures, university partnerships with regional and national enterprises, and spin-off companies created from UNC Charlotte research results.

The CRI is committed to the development of intellectual capital through global collaborations with industry, government, and academia. The CRI seeks to develop technology-based academic and business partnerships, ranging from consultation to onsite collaborative research. These efforts attract expertise and resources to the region resulting in the creation of a top-tier interdisciplinary technology research community. Important products of this endeavor include regional cooperation, entrepreneurship, and economic development.

The CRI research vision will continue to grow as emerging research initiatives, such as bioinformatics, biomedical engineering systems, and translational research, develop at UNC Charlotte. With its research centers housed in three new custom-designed buildings on the Charlotte Research Institute Campus, the CRI helps companies initiate new partnerships at UNC Charlotte and offers a variety of opportunities to engage talented faculty and make use of specialized facilities that are available only at UNC Charlotte.

The Center for Precision Metrology is focused on precision engineering and measurement including research in manufacturing processes and quality assurance for mechanical parts to within a millionth of a meter. New state-of-the-art facilities include clean rooms and multiple metrology labs. Research



efforts have included high-speed machining, specialized sensors, aerospace industry applications, and have attracted companies such as Caterpillar, Mitutoyo, and Boeing for collaboration. The center also includes a group focused on motorsports and automotive research with collaborative partnerships with area race teams and NASCAR. The center has been recognized as a National Science Foundation Center of Excellence in New Industry Collaboration and in Nanoscale Science and Engineering.

The Center for eBusiness Technology collaborates with Bank of America, Wachovia, and other financial institutions to solve industry issues pertaining to technology applications. These applications include: information privacy and security, intelligent data analysis, systems integration, information visualization, as well as emerging research in Bioinformatics, Visual Analytics, and Homeland Security. The center has the distinction of being a "National Security Agency Center for Information Assurance Education." Recently, the Center also was funded as a Regional Visualization and Analytics Center by the U.S. Department of Homeland Security.

The Center for Optoelectronics and Optical Communications includes research areas in: design and fabrication of photonic devices, integrated optical circuitry, assembly and packaging of optical systems, optical materials, methods for precision optical metrology, and optical imaging and inverse methods for wavefront synthesis. The Center has successfully allied with the Massachusetts Institute of Technology (MIT), Duke University, The Carolinas MicroOptics Triangle, and the North Carolina Photonics Consortium. A respected leader in the discipline, the center has continuing support from the Defense Advancement Research Projects Agency (DARPA).

The Bioinformatics Research Center conducts multi-disciplinary research involving the physical and life sciences, computer science, and mathematics and statistics with specific focus in the areas of functional genomics, statistical genetics, and proteomics. Projects underway include work in mechanisms of alternative gene splicing, new approaches to the analysis of microarray data, and the use of systems analysis techniques to understand gene-gene interactions. The center has taken a leadership role in developing Bioinformatics programs in collaboration with the developers of the North Carolina Research Campus, a billion-dollar, 350-acre research park that will be home to the research programs of a large number of private biotechnology companies as well as university and medical research programs.

The Center for Biomedical Engineering Systems addresses complex problems in healthcare in the Charlotte community and beyond. The Center builds research and development collaborations between researchers within UNC Charlotte's Colleges of Engineering, Arts and Sciences, Health and Human Services, and Computing and Informatics; local healthcare institutions (including Carolinas Medical Center, Charlotte Orthopedic Research Center, and Presbyterian Hospital); and corporations in the Charlotte metropolitan area to solve biomedical engineering problems. The Center's research is focused in four primary areas: (1) biomedical support systems; (2) biomedical modeling, imaging, and processing; (3) biomechanics and mobility research, and biomedical instrumentation.

More information about the Charlotte Research Institute can be found online at www.charlotteresearchinstitute.com.

The UNC Charlotte Urban Institute develops and supports programs that give impetus to the University's urban mission. The Institute is a catalyst for projects designed to meet the applied research needs of urban and developing areas of the Charlotte Metropolitan region. It also provides administrative and technical support to organizations involved with issues of an urbanizing society. Projects are initiated by members of the faculty, community clients or the Institute staff and focus on a broad spectrum of urban topics (e.g., local government, the environment, land use, business assistance and economic development). Students may become involved in Institute projects as part-time research assistants or interviewers, or they may become involved with the Institute in conjunction with course work or degree requirements by writing term papers, graduate theses, or completing internships. Following are the Institute's areas of program:

UNC Charlotte URBAN INSTITUTE

Open Space Institute of the Carolinas is a membership organization open to agencies and individuals who have an interest in the conservation of land in the central piedmont region of the Carolinas. The program maintains an information base of conservation initiatives in the region and implements research and educational activities relating to broadening the community's understanding of the importance of conservation efforts.

Community Research and Service conducts needs assessments and public opinion surveys of both target and general populations focusing on issues of concern to local, regional, and national clients. The program also provides support to government and community agencies in the planning and implementation of special projects and strategic planning activities.

Land Use and Environmental Planning (LUEP) conducts research for and provides planning services to county and municipal governments and to businesses and non-profit organizations in the central piedmont region of the Carolinas. LUEP operates the Open Space Institute, which works collaboratively with regional land conservation organizations to define and achieve a shared regional open space vision, through education, research and planning. This division maintains and provides access to a rich set of regional information resources in support of land use, open space and environmental planning.

Evaluation Research provides research and evaluation services focusing on human service programs. Impartial, third-party program evaluation is provided to decision makers in government and private organizations for use in responsible financial management and long-term decision making regarding program policy and funding issues.

Technology Services and Training is a division specializing in the application of computer technology to develop high-payoff solutions for public-sector clients. A major on-going project involves providing software support and training for a statewide computerized school bus routing project called Transportation Information Management Systems (TIMS). Other projects include: database design and desktop mapping; projects for economic development, social service agencies, and healthcare providers; conference planning and hosting; and redistricting for school systems.

The Center for Mathematics, Science, and Technology Education works closely with the 11 regional school districts, their administrators, and teachers to provide professional development activities in the content areas of mathematics and science for K-12 teachers and in updating and enhancing their methodologies of teaching mathematics and science.

The Center for Professional and Applied Ethics provides ethics education for professionals, organizations, and the general public; serves as a focus point where University administrators, faculty, and students critically reflect upon the significant issues that arise in their everyday work and/or studies; helps spread ethics-related courses throughout the University curriculum; and works collaboratively with on- and off-campus groups to organize ethics-focused conferences, workshops, seminars, lecture series, and Channel 22 TV programs. The Center has 46 Faculty Associates who represent the University's major colleges and professional schools and 40 off-campus Advisors who represent the major professions (medicine, business, law, education, public policy, engineering, and information technology).

The Institute for Social Capital was created to serve as a link between community-based government and non-profit agencies and organizations serving children, youth, and families in order to facilitate information sharing between these groups, with the broader goal of fostering research and data-based community decision-making. In addition, the Institute was designed to link the community with University researchers with expertise in a wide range of areas involving children, youth, and families. The Institute's mission is to provide social resources that advance University research and increase the community's capacity for data-based planning and evaluation of programs. The University of North Carolina at Charlotte Institute for Social Capital, Inc. is a wholly-owned subsidiary of the Foundation of the University of North Carolina at Charlotte. More information can be found online at www.socialcapital.uncc.edu.

Health & Well-Being Services

STUDENT HEALTH CENTER

www.studenthealth.uncc.edu

The Student Health Center's (Brocker Health Center) mission is to promote healthy students by providing health care, education and outreach services. It provides primary medical care, disease prevention, health education, wellness promotion, and various specialty services, including allergy injections, immunizations, gynecology, physical therapy, and HIV screening to all regi stered UNC Charlotte students. The Student Health Center is staffed by a team of physicians, physician assistants, and nurse practitioners. The pharmacy fills prescriptions from outside physicians as well as the Center's own doctors.

Appointments are strongly recommended; this eliminates long waits and assists students in scheduling medical services around class schedules.

Seriously ill students and emergencies are referred to local hospitals or other appropriate medical facilities.

All students are required to either demonstrate proof of insurance or to purchase a University Student Health Insurance Plan through the UNC Charlotte Student Health Center. Full details may be found online at www.studenthealth.uncc.edu.

The UNC Charlotte Mandatory Health Insurance Requirement applies to following students: Undergraduates enrolled in 6 or more credit hours; graduate students enrolled in a degree-seeking course regardless of the number of credit hours; graduate students enrolled in a Thesis/Dissertation course. .

All of the above students are charged for health insurance on their student accounts. To remove the charge, students who already have insurance can submit by the deadline their insurance waivers online at www.studenthealth.uncc.edu.

The student health fee covers many of the costs for services; however, additional fees are charged for x-ray, pharmacy, laboratory, and gynecology services, injections, and special procedures. Fees for service may be paid by cash, check, or transferred to the student's University account. Fees are subject to change. For more information, visit the Student Health Center website or call 704-687-4617.

COUNSELING CENTER

www.counselingcenter.uncc.edu

The Counseling Center at UNC Charlotte supports the academic, personal, and interpersonal development of UNC Charlotte students by providing short-term individual and group counseling; consultation for faculty, staff, parents, and students; and educational programs to the campus community.

In addition, the Center promotes a healthy university community by offering short-term consultation with faculty and staff for personal and work-related issues. Consistent with the academic mission of the University, the Center also serves as a training site for graduate students in psychology and counseling, and encourages scholarly activity and professional development of staff.

Information between student clients and counselors is confidential, in accordance with guidelines established by the American Psychological Association and the laws of the state of North Carolina. All currently enrolled students are eligible for an initial assessment. This first session helps both the student and counselor decide how Counseling Center services might best serve a student's needs. These services may consist of individual or group counseling at the Counseling Center or a referral to an on-campus or off-campus service.

Counseling is provided to help a person cope with difficult situations and conflicts; improve interpersonal relationships; adjust to college and other life transitions; and overcome specific psychological difficulties such as depression, anxiety, eating disorders, and substance abuse. Groups are offered each semester, some of which are short-term structured groups that address a particular theme (such as anxiety reduction). Other groups are ongoing and unstructured.

Outreach and consultation are important services provided by the Counseling Center. Staff members are available to consult with faculty, staff, parents, and students on topics such as enhancing communication, improving the learning environment, and helping a particular student with a problem. Outreach activities, usually focusing on some aspect of personal, interpersonal, or group development, include programs conducted outside the Counseling Center to meet the needs of a group or organization.

Initial counseling appointments may be arranged by visiting the Counseling Center at 158 Atkins or by calling the Center at 704-687-2105. More information about the Counseling Center and its services can be obtained by visiting the website.

Environmental Services

The Chimney Rock Park Field Station is located in the Blue Ridge Mountains, 30 miles southeast of Asheville. The University has an agreement with Chimney Rock Park to investigate the biological, geological and cultural features of the 800-acre park. Area available for study extends from the Broad River at the bottom of Hickory Nut Gorge to the top, a vertical climb of over 1,500 feet.

The UNC Charlotte Experimental Ecological Reserve is a 100-acre tract of land set aside on campus by the UNC Charlotte Board of Trustees as a permanent ecological reserve for use as an outdoor classroom and laboratory. The reserve includes a floodplain forest, pine stands, mixed pine-hardwood forest, and a relatively undisturbed 10-acre watershed of oak-hickory forest.

The UNC Charlotte Rocky River Wildlife Refuge is a 46-acre natural area located east of Charlotte in Stanly County. Its purpose is to preserve the natural features of the area and allow research and field trips to study the plants and animals within the North Carolina slate belt formation.

The UNC Charlotte Botanical Gardens, located on campus, consist of the McMillan Greenhouse, the Van Landingham Glen, and the Susie Harwood Garden. Begun in 1966, these gardens combine indoor and outdoor facilities for teaching, research and public display of a wide variety of native and exotic plants. The outdoor gardens are open seven days a week, and the greenhouse is open Monday through Saturday. Students and the public are invited to visit, free of charge. More information can be found online at http://gardens.uncc.edu.

Recycling services are coordinated by the Office of Waste Reduction and Recycling (704-687-2137) within Facilities Management. The University's recycling program, initiated by students in 1990, currently recycles 31% of the solid waste generated on campus, including approximately 40 different

materials. Residence halls are equipped with outdoor recycling centers, recycling containers in trash rooms or lobbies, and a small recycling bin in each room. Toner cartridges, aluminum cans, plastic and glass bottles, newspapers, magazines, and cardboard can be recycled at the residence halls. In addition to the above materials, office paper, Styrofoam peanuts, transparencies, and hard and soft back books can be recycled in the academic and administrative areas. The Waste Reduction and Recycling program also includes a food-waste composting project. This project was started with a grant awarded by the North Carolina Department of Environment and Natural Resources Division of Pollution Prevention and Environmental Assistance, and has been the topic of several graduate research papers.

The recycling program provides educational sessions for students, faculty, and staff. The program coordinates and sponsors the UNC Charlotte Earth Day Environment Festival and holds various educational programs throughout the year. The Office of Waste Reduction and Recycling offers students a chance to actively embrace their environmental responsibilities and to demonstrate concerns through volunteer and employment opportunities. To volunteer, contact the environmental educator at 704-687-4283.

These and other waste reduction and recycling programs help UNC Charlotte in its effort to meet North Carolina's 40% waste reduction goal. For more information about UNC Charlotte's waste reduction and recycling activities, view the website at http://facilities.uncc.edu/recycling or call the office at 704-687-2137or 704-687-3890.

Community Relations

The University recognizes that its mission reaches beyond the borders of the campus to the surrounding region and the state. The University touches many facets of community life and serves as a catalyst for development of a regional approach to solving problems in education, economic development, transportation, the environment, cultural amenities, and the quality of life. Faculty, staff, and students have made a significant impact on the region through research, historic preservation, planning, the arts and literature, and the delivery of government and social services.

The Office of Alumni Affairs, located in the new Harris Alumni House, serves as the liaison between the University and all graduates. The Alumni Association's primary purpose is to involve alumni in the promotion, advancement, and support of the mission of UNC Charlotte and to develop and stimulate a continuing interest in our Alma Mater by providing opportunities for service, fellowship, and loyalty. A Board of Governors, elected by the active membership, establishes policy of the Alumni Association and assists in the planning and implementation of projects, events, and programs. Active members of the association are those alumni who contribute to the University or the UNC Charlotte Foundation.

Programs of the Alumni Association include the Alumni Awards Banquet, regional, local, special interest and collegiate chapters, homecoming activities, networking socials, public affairs events, reunions, merchandising opportunities, group travel, athletic support, recognition of outstanding seniors, and sponsorship of the Student Alumni Ambassadors.

The Office seeks to maintain lifelong contact with all graduates. Graduates are encouraged to become active in the Alumni Association and to notify the Office of Alumni Affairs of address changes, employment information, and other significant events, such as marriages, births and honors. In this way, adequate records can be maintained, and the Alumni Affairs Office can publish news about graduates in the *UNC Charlotte*, the alumni magazine. Today, UNC Charlotte boasts more than 75,000 living alumni and adds 4,500 to 5,000 new alumni each year.

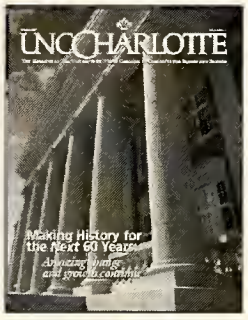
More information about and for alumni (including benefits) can be found online at www.uncharlottealumni.org.

The Office of University Development. Known traditionally as a "state-supported institution," UNC Charlotte is more accurately a "state-*assisted* institution," as the University depends on non-state resources for more than half of its operating needs. Philanthropy is critically important, providing the critical margin of excellence so that the University can fulfill its threefold mission of education, research and public service.

The Office of University Development plans and implements the private fund-raising and related efforts of the University and the Foundation of The University of North Carolina at Charlotte, Inc. Its functions include annual giving, gift planning, major gifts, corporate and foundation relations, gift processing, alumni/donor records, research, donor stewardship, prospect coordination and clearance, and campus-wide development services.

The Foundation of The University of North Carolina at Charlotte, Inc. is the 501(c)(3) public charity, incorporated in 1965 to benefit UNC Charlotte through asset management and fund raising. University employees in the Office of University Development in the Division of Development and Alumni Affairs and in the Office of Sponsored Programs in the Division of Business Affairs perform the fund-raising and business functions of the Foundation, respectively. In exchange, the Foundation transfers funds to UNC Charlotte to enhance its teaching, research, and service missions.

The Office of Public Relations is the official communications channel through which the University disseminates information to its various publics. The Office has three major functions: (1) external media relations; (2) internal communications; and (3) official University publications that are distributed to off-campus audiences. The Office works with media outlets throughout the country on news and feature coverage about University programs and its people. Additionally, the staff writes and distributes tip sheets and news releases about campus activities, as well as faculty and student achievements. The Office produces a weekly newsletter, *Campus News,* to inform faculty and staff about campus activities; publishes the official university magazine, *UNC Charlotte,* which is distributed to alumni and friends of the University; and provides editing and design assistance in printing official publications for University departments.



Student Life

The University of North Carolina at Charlotte provides a comfortable and enjoyable environment for students that is conducive to studying. The services, facilities, and programs of the University promote individual student development and foster a community which promotes the involvement of students in their intellectual, cultural, spiritual, emotional, and physical development.

Students at UNC Charlotte are encouraged to participate in extracurricular activities. The Student Government Association, the Campus Activities Board, and Student Media are a few of the available activities that can play a significant role in each student's development and total education. Participation in activities, ranging in type from service and religious to athletic and social, and from creative arts and crafts to wilderness experiences, increases a student's opportunities to acquire leadership skills, to experience the responsibilities involved in functioning within a self-governmental process, and to develop personal talents and interests.

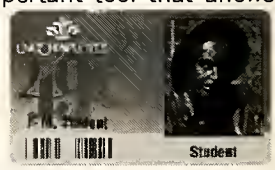
Note: *Students are entitled to participate in several student groups and organizations as long as they are academically eligible to continue their enrollment. However, participation in organizations associated with the Student Government Association, Campus Activities Board, and Student Media requires students to be in good standing with the University, both academically and in accordance with The Code of Student Responsibility (located elsewhere in this Catalog).*

The Bonnie E. Cone University Center serves as the hub of activity for informal gatherings, social and co-educational activities on campus and provides an attractive, comfortable place for relaxation and study. A variety of activities, including concerts, movies, lectures, and banquets, are offered to students and the campus community. Services and facilities include several meeting rooms and multi-purpose spaces, art galleries, the information desk and music listening/TV lounge, the Candy Shoppe, Creation Station (signs, banners, balloons, etc.), Campus Event Information Office, Technical Services, and Conferences Services.

Student service offices in the Center include: The Office of Student Activities, Center for Leadership Development, Multicultural Resource Center, Campus Activities Board, Student Government Association, Student Media, Student Organization Offices/Mailboxes, and the Student Activity Fees Commission.

Additional services include the I.D. Office, *Main Street Market* Food Court, ATM machines, computing stations, wireless network access, and warm, comfortable lounge spaces. Please visit http://cone.uncc.edu/ for more information or details on how to get involved with the programs offered.

Students can obtain their **49er Card** from the **I.D. Office**, which is located next to the *Main Street Market* Food Court in Cone University Center, and open from 8 a.m. to 5 p.m., Monday through Friday. Every student's 49er Card is an important tool that allows each student access to their residence, meals, copiers, printers, vending machines, laundry facilities, the bookstore, on-campus events, the game room, and many other services that are available on campus. The 49er Card displays each student's photo along with their student ID (different from their Social Security number for privacy reasons). Additionally, entertainment venues around Charlotte, such as movie theaters, may



offer UNC Charlotte students discounts on admission upon presentation of the 49er Card.

After Hours (Cone Center) and **The Rathskeller** (Residence Hall Cafeteria) can be reserved for dances and other events. The Campus Activities Board (CAB) and Campus Programs offer a wide variety of entertainment, including name musical and novelty acts, lectures, movies, and diversity programs.

The Campus Bookstore, a Barnes & Noble Booksellers store, offers new and used textbooks, non-required special interest and gift books, school supplies, computer software, greeting cards, gifts, and insignia clothing and other logo items. Services include "pre-packs of textbooks" specially designed for freshmen and special ordering of books not carried in stock.

NEW Student Union. The expected opening date of UNC Charlotte's new Student Union is Fall 2009. Designed to be the epicenter of campus activity, the yet-to-be-named union will be home to student services of every kind including a 210-seat movie theater, bookstore, convenience store, art gallery, game room, extensive new dining choices, 600-seat state-of-the-art ballroom, student lounges, and much more! Find out more online at http://studentunion.uncc.edu/.

Sports and Recreation

The Charlotte 49ers Department of Athletics provides competition in 16 intercollegiate varsity sports for men and women. Each sport competes under the governing powers of the National Collegiate Athletic Association (NCAA) at the Division I level, which is the highest competitive level for collegiate varsity sports. Scholarships are available for all varsity sports, male and female.

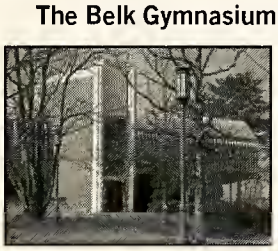
Male student-athletes compete in eight sports: baseball, basketball, cross-country, golf, soccer, tennis, indoor track and field, and outdoor track and field. Female student-athletes also compete in eight sports: basketball, cross-country, soccer, softball, tennis, volleyball, indoor track and field, and outdoor track and field.

The Charlotte 49ers recently joined the Atlantic 10 Conference with play in the league beginning in 2005-06. The Atlantic 10 sponsors championships in each of the 49ers' 16 sports. The Atlantic 10 is made up of 14 schools: Charlotte, University of Dayton, Duquesne University, Fordham University, George Washington University, La Salle University, University of Massachusetts, University of Rhode Island, University of Richmond, St. Bonaventure University, Saint Joseph's University, Saint Louis University, Temple University and Xavier University. Atlantic 10 tournament champions in baseball, men's and women's basketball, golf, men's and women's soccer, softball, men's and women's tennis and volleyball receive automatic bids to the NCAA post-season tournaments.

Each of the 49ers teams, except golf and cross-country, competes on campus in home competition. The basketball and volleyball teams compete in Halton Arena, the soccer and track and field programs compete at the Irwin Belk Center, while the baseball, softball and tennis teams compete at the D.L. Phillips Athletic Complex. At the time of printing, a new and improved baseball stadium, Robert and Mariam Hayes Stadium, was under construction.

IMPORTANT: UNC Charlotte students have free admission to all regular-season home athletic contests with proper University identification.

Intramural & Recreational Services develops and conducts programs that provide opportunities for University students and faculty/staff members to participate in recreational activities. Four major program areas offer a variety of structures in which members of the University community may pursue recreational interests. *Intramural tournaments and events* are scheduled throughout the year for individual, dual, and team participation. The tournaments and events are organized to provide separate competition among coeducational, men's, and women's teams. *Sport Clubs* provide an opportunity to participate in a single sport on a continuing basis. Approximately thirty clubs, ranging from martial arts to lacrosse to paintball, are active each semester. *Fitness and Wellness* opportunities include group fitness, mind/body classes and personal training. In addition to structured sports programs, the division promotes the concept of informal recreational use of athletic facilities through the *Open Recreation Program*.



The Belk Gymnasium features basketball, volleyball and badminton courts, an indoor swimming pool, racquetball courts, a weight room, and lockers for students, faculty, and staff. It also houses classrooms and an auditorium for audiovisual presentations.

The James H. Barnhardt Student Activity Center (SAC) is the focal point of the campus. As a social,

dining, and recreational center for the campus community, the SAC is 232,000 total square feet and contains a food court, game room, jogging track, recreational courts, climbing wall, weight room, group fitness room, and training center which offer students, staff, and faculty an opportunity to indulge in non-academic activities which promote communication, community, health, and fitness. The facility also holds a 10,000 seat event arena which is used for commencements, intercollegiate athletic competition, concerts, cheerleader competitions, tournaments, job fairs, trade shows, large scale parties, or University events. The third and top floor of the SAC is comprised of a large and gracious hospitality area that can be sub-divided into five separate meeting salons.

Office of
Dean of Students

www.dso.uncc.edu

The Dean of Students Office is a department within the Division of Student Affairs and serves as a key link between students and other areas of campus life. As the hub of the Niner Nation student experience, the mission of the Dean of Students Office is to serve the University community as a compass and advocate for student centered education built on integrity, citizenship and diversity.

Various programs are sponsored by the Dean of Students Office to promote opportunities for learning and growth during a student's college experience. The staff is responsible for advising and promoting the following programs: student government, Greek life, diversity support services, new student orientation, off-campus student services, women's programs, student conduct, volunteer services, Community Service Learning Community, religious affairs, and parent and family programs. In addition, the staff of student development professionals provide support for any student who has a grievance or concern about the University. The office also coordinates and assists with the settlement of academic and behavioral misconduct charges against individuals and student organizations.

The Dean of Students Office welcomes all students and values the concept of student involvement in leadership opportunities on campus. Leadership training offered within this department focuses on nine competencies: (1) interpersonal relationships, (2) critical thinking, (3) social justice, (4) ethics, (5) social responsibility, (6) leadership, (7) communication, (8) resource awareness, and (9) professional responsibility. Through these competencies, students often find themselves learning new skills and abilities that can help them become more productive and responsible citizens.

Each of the programs and services listed below provides excellent opportunities for students to incorporate classroom knowledge into practical situations. The Dean of Students Office is located in 217 King. For information, call 704-687-2375.

PROGRAMS FOR NEW STUDENTS

New Student Programs help freshmen and transfer students learn more about UNC Charlotte. SOAR and WOW! are two orientation and transition programs offered to new students.

SOAR (Student Orientation, Advising and Registration) occurs during the summer and immediately prior to the fall and spring semesters. This program provides the opportunity for new freshmen and transfer students to begin their transition to UNC Charlotte. Orientation workshops, testing, academic advising, and first semester course registration occur during SOAR. Visit online at www.soar.uncc.edu.

WOW! (Week of Welcome!) is a week-long event welcoming both new and returning students to campus. This program is a University-wide effort to especially welcome new students to campus and acc limate them to the many programs and services offered by the University. All students are invited to participate in WOW! activities which include 49er New Year, dances, movies, prizes, cookouts, and other fun events. Visit online at http://wow.uncc.edu.

STUDENT GOVERNMENT

Student Conduct promotes personal responsibility and encourages civility, integrity and a sense of community among UNC Charlotte students. The purpose of the student conduct process is to maintain a campus community conducive to a positive learning environment. Consistent with this purpose, intentional efforts are made to foster the personal, social and ethical development of those students whose behavior is in conflict with University expectations, both in and out of the classroom. The desired outcome of the student conduct process is to provide an educational opportunity by which individuals or groups can recognize the consequences of their actions and be held accountable for their choices. As part of their individual responsibility to the University community, all UNC Charlotte students are expected to be familiar with their rights and responsibilities as outlined in The Code of Student Responsibility, regarding behavioral violations, and The Code of Academic Integrity, regarding violations through academic coursework. Visit online at www.dso.uncc.edu/judicial and the

Student Conduct section of this *Catalog* for more details.

The Student Government Association (SGA) provides students with an early experience in governmental affairs. Students often find their work in student government a useful background for later public service. The University encourages student participation in its affairs and has student representatives on many faculty and administrative committees. The leaders of student government are committed to representing the student body and to developing students' awareness of the many facets of campus life. All regularly enrolled students, both full and part-time, are eligible to participate in student government. Visit online at http://sga.uncc.edu.

The Student Government Association is comprised of:

The Executive Branch is advised by the Vice Chancellor for Student Affairs and is made up of the president, the vice president, chief of staff, the four class presidents, and the cabinet, who are appointed by the president.

The Student Senate is advised by the Assistant Dean of Students and is comprised of the President Pro Tempore and representatives from each academic college who are chosen by the students with majors in the college. The Vice President of the Student Body conducts all meetings and serves as liaison between the Senate and the Student Body president's office.

The Judicial Branch is advised by staff in the Office of Student Conduct and is composed of panel members of the Student Court including leadership in the Offices of Student Attorney General, Chief Justice of the Hearing Panel, and Student Counsel. Members of Student Court are responsible for hearing cases of alleged violations of the UNC Charlotte Code of Student Responsibility and determining appropriate sanctioning if the accused is found responsible for violation of the Code.

GREEK LIFE (FRATERNITIES/SORORITIES)

Greek Life at UNC Charlotte consists of 24 fraternities and sororities founded upon the principles of scholarship, leadership, community service and the formation of lifelong friendships. Fraternities and sororities uphold these fundamental values in their pursuit of collegiate excellence, enabling all members to achieve their personal best. Greek Life provides students with an opportunity to be a part of a large group with many diverse characteristics while sharing a common goal. The fraternities and sororities work together to provide a quality experience for anyone who joins via service projects, educational programs, and social activities. The experience the student gains from organizing and motivating people, planning and implementing projects and learning to give back what one has received can be an invaluable part of a college education. Membership recruitment for a fraternity or sorority primarily begins with each new semester. However, some organizations hold recruitment meetings throughout the year. Some of the many programs within Greek Life include: the Greek Leadership Conference, All-Greek Philanthropy Carnival, Greek Week, Airband, Stepshow, and New Member Convocation. Visit online at www.greeklife.uncc.edu.

VOLUNTEER PROGRAMS

Volunteer Services helps students find community service opportunities through a clearinghouse containing listings of local non-profit agencies. A wide diversity of service activities is available, and the Volunteer Services staff helps students find an opportunity that matches their interests and skills. Volunteer Services also has a number of issue-based programs that focus on topics like hunger, education, homelessness, literacy, and mentoring in which all UNC Charlotte students, faculty, and staff may participate. Volunteer Services sponsors special events such as Relay for Life, 49er Plunge, Food Recycling Program, Volunteer Fairs and Into the Streets. Visit online at www.dso.uncc.edu/volunteer.

Community Service Learning Community (CSLC) is a one-year program for first-year students who are planning to live off-campus and, most importantly, have expressed an interest in community service. Most of the CSLC students are from the Charlotte metropolitan region. This interdisciplinary, non-residential learning community draws on the ideals of service learning, which combines volunteer efforts with academic study. Students in this learning community are provided with opportunities to make a difference by volunteering in the local community, form relationships with students living on and off campus, and learn about community and campus resources.

Crossroads Charlotte, a component of the Community Service Learning Community, is a civic engagement initiative that aims to promote civic responsibility and respond to the critical needs of the Charlotte-Mecklenburg community through collaborative campus and community partnerships. Participants in the program utilize intentional questions and creative foresight to pursue a positive future for the local community. Students are challenged to apply classroom theory to personal service experiences through volunteering in the local community and learning about community and campus resources.

RELIGIOUS PROGRAMS

Religious Affairs serves as a liaison for faith-related matters within the University community. The office assists in directing new and existing registered religious organizations and faith affiliates to University procedures and processes. In cooperation with the Office of Religious Affairs, the Inter-Religious Council (IRC) is comprised of any persons in the University community interested in exploring spirituality. The IRC encourages co-programming efforts among various faiths or groups in an effort to promote spiritual awareness and development for the campus community. Various programs sponsored by Religious Affairs and IRC are Focus on Faith Week, Brown Bag Lunch Discussions, Habitat for Humanity service projects, and various speakers. Visit online at http://religiousaffairs.uncc.edu.

FAMILY PROGRAMS

Parent and Family Programs are designed to provide communication between the University and family members of UNC Charlotte students in order to support student success, generate goodwill for the University, and promote an appropriate role for families within the campus community. Through collaboration with a variety of departments on campus, Parent and Family Programs provide resources to keep families connected to the University and equipped to support their student throughout the college experience.

OTHER PROGRAMS

Student Advising for Freshman Excellence (SAFE) program is a peer mentoring program designed to help students academically transition through their first year of college. The SAFE program connects new students with upper-class mentors who serve as role models during the first year of college and provide academic and student development programming to address needs in a holistic manner. Visit online at www.dso.uncc.edu/safe.

Women's Programs strives to promote understanding, raise awareness, and address the needs of women in the UNC Charlotte community by offering a variety of programs to students, faculty, and staff. The goals of the Women's Programs Office is to support and serve women by celebrating their achievements and advocating for a gender friendly environment. Women's Programs provides faculty, staff, and students with information and services about women; sponsors programs which address and educate the community regarding issues concerning women; and advocates for the rights of women in the fight to end domestic violence. Programs offered include: the Women's Leadership Conference, Take Back the Night, Clothesline Project, and Vagina Monologues. Visit online at www.dso.uncc.edu/women.

Minority Student Support Services is designed to assist and advocate for the needs of UNC Charlotte's under-represented populations. Through collaboration with a variety of offices in campus, the program focuses specifically on academic support, mentoring, social networking, ethnic and cultural development, leadership development, and personal growth.

Off-Campus Student Services supports students by providing informational resources about off-campus living and by working with campus departments to encourage University-wide support systems for off-campus students. Students who decide not to live in the residence halls can choose from a variety of apartment complexes, rental properties, or condominiums located near campus. Off-campus Student Services programs include Vendor Fairs, Coffee Brakes, Lunch Brakes, and safety presentations. Visit online at www.dso.uncc.edu/offcampus.

Student Activities

http://studentactivities.uncc.edu

The Office of Student Activities (OSA) is a department within the Division of Student Affairs, which works to enhance the growth and development of students directly and indirectly by planning, advising, supporting and implementing a variety of programs, products and services. OSA includes Campus Activities Board, Student Media, Center for Leadership Development, Multicultural Resource Center, Venture, and Student Organizations. OSA sponsors several special programs during the year, including A Cone-A Fair, annual poster sales, Bonnie E. Cone Center Art Gallery exhibitions, and special events such as outings to Charlotte Bobcats games and summer jazz concerts on the Cone Center patio. Not sure where or how to get active? Come by the Office of Student Activities, located next to After Hours and Main Street Market in Cone University Center and talk with us! Information on each of the units of OSA follows. For additional information, please call 704-687-2521 or visit online at http://studentactivities.uncc.edu.

CAMPUS ACTIVITIES BOARD

The Campus Activities Board (CAB) is the largest student programming organization on campus and is responsible for planning diverse, quality events for the University community. CAB offers over 100 programs a year and works to enhance and unify the University community by planning social, cultural, educational and recreational events that complement the university's academic mission. Founded early in the history of UNC Charlotte, CAB maintains a vital role in fostering 49er spirit and traditions through popular programs such as Week of Welcome, Week of Madness, Homecoming, and more. Located in Cone Center, 3rd Floor. For more information, visit online at http://cab.uncc.edu or call 704-687-2450.

Opportunities for student involvement include the following committees:

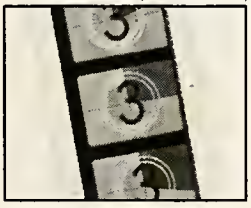
Live Entertainment – brings entertainment ranging from comedy, live music, variety acts and other entertainment trends. On at least one Friday night each month, this committee brings a wide variety of diverse acts to campus.

Special Programs – Stand up local comedy, open mic, poetry slams, improve, dance -- you name it and this committee works to bring it to the Thursday night series, presented every other week.

Talks and Topics – Sometimes serious, sometimes fun, or a little of both! In an effort to complement the academic mission and offer a marketplace of various opinions and ideas, this committee works to provide forums, lectures, and debates on a variety of issues and topics.

Cone Connections – Anything from campus brown bag forums, to live performances – this committee works to bring life into the Cone University Center during the daytime and over the lunch hour. Presented on Wednesdays. The main focus includes lunch time series in After Hours, a popular eating place in Cone University Center.

Feature Films – You can see it all here! Every other week all year, this committee merges a combination of blockbusters, classics, independents, visual media and new "sneak peak" screenings on Sunday evenings and Monday lunchtime. This film series strives to create an educational as well as entertainment value appeal for a variety of students.



Spirit and Traditions – Enables you to be part of living the 49er spirit and traditions by planning annual events such as Homecoming, Week of Madness, and Week of Welcome. This committee works collaboratively with other campus organizations, faculty, and staff to produce university wide events.

STUDENT MEDIA PRODUCTIONS

The Student Media Board is the governing body for Student Media. It is comprised of students and administrative staff members, as well as representatives of the various student media.

The University Times is the campus newspaper, published every Tuesday and Thursday, and offers campus news and journalism experience for students. The newspaper provides a vital service to the entire University community by keeping readers informed of issues of common concern and interest. Family members may keep informed with the University's news by calling 704-687-2663 and ordering a subscription to *The University Times*.

Niner Online is the university community's home in cyberspace. UNCC news, sports, and feature stories are posted several times each week. Students can sign up to have the headlines emailed to them throughout the week or anytime breaking news is happening. Students gain experience with Internet publishing and writing by working with NinerOnline. Visit the site at www.nineronline.com.

Media Marketing is the sales and promotions branch of Student Media. The department solicits advertising and coordinates promotion for UNC Charlotte's student publications. Media Marketing offers real world experience and internship opportunities for business, marketing, and communication careers.

Sanskrit is the nationally recognized literary-arts magazine published by students interested in the arts. Original work in writing, drawing, photography, and other arts is welcomed by the editor. Submissions are professionally juried, and selections are published in the annual edition of the magazine.

Internships are available in Student Media. Interns can earn academic credit and receive "hands on" media experience in writing, design, photography, advertising, desktop publishing, and management.

For more information about how to get involved with the student media, contact the office at 704-687-2663, 175 Cone Center, or visit online at http://media.uncc.edu.

CENTER FOR LEADERSHIP DEVELOPMENT

The UNC Charlotte Center for Leadership Development provides students with opportunities to develop leadership skills and abilities and provides the University and student organizations more effective leadership. The goal is to provide a comprehensive and diverse program of leadership development activities for current student leaders and potential leaders.

The program consists of both group and self-paced leadership components, retreats and conferences, as well as academic courses. Individual and group consultation is also available.

Academic Certificate in Leadership Studies—An 18-credit hour concentration in interdisciplinary leadership studies leading to an academic certificate awarded at graduation from the institution

Conferences—Co-sponsorship of leadership conferences for Greeks, women, and members of multicultural organizations
Emerging Leaders—Group leadership experience for freshmen (applications available early Fall semester)
Individual and Group Consultation—Assistance with applications, interviewing, leadership issues and programmatic needs
LEAD Team—Students trained as presenters available to make presentations on a wide variety of leadership topics
LeaderShape Institute—Leadership program for established leaders; focus is on vision and leading with integrity
Leadership Fellows—Fall semester group leadership experience for upper classmen (applications available Spring semester)
Leadership Learning Community—One-year residential program for first-year students who have an interest in developing or building leadership skills and abilities
Leadership Website—Provides information, events calendar, and leadership resources
Leadership, Communication, and Group Dynamics—A 3-hour leadership theory course (COMM 3135)
Leadership, Service and Ethics—A 3-hour course in communication studies for students interested in developing a leadership framework and obtaining academic credit (COMM 3136)
PILOT (Programs In Leadership and Organizational Training)—individualized leadership program that provides an opportunity for leadership certification in a self-paced program

Contact the Center for Leadership Development for more information at 704-687-2703 or online at http://leadership.uncc.edu.

MULTICULTURAL RESOURCE CENTER

The Multicultural Resource Center (MRC) offers an environment for students, faculty and staff to learn about and to further explore personal identity, diversity, and global relationships while making connections with individuals that represent a vast array of heritages, backgrounds, interests, and experiences. The Center is available to assist students individually in their own explorations of themselves and/or others as well as to assist student organizations in their operations and programming efforts.

The MRC houses a resource area bearing information regarding both University and community support sources; a resource library containing reference books and video media (VHS/DVD) that cover a variety of topics; an assortment of multicultural publications (magazines, newspapers, & newsletters); and computer workstations with printing access. To supplement these resources, the Center offers ongoing education and training exploring the many facets of diversity and human relations.

Programming supported by the MRC include the annual International Festival, Martin Luther King, Jr. Celebration, cultural heritage months (Black History Month, Hispanic/Latino Heritage Month, Asian/Pacific Islander Heritage Month, etc.) , as well as other special events. Along with these efforts, the MRC provides support to 40+ multicultural student organizations, as well as support for student/student organizational efforts that support its mission and purpose. Supported organizations include the Black Student Union (BSU), Latin American Student Organization (LASO), Muslim Student Association, Vietnamese Student Association, and a host of others.

Multicultural Student Council (MSC) is a diverse body of students organized to assist the MRC in its efforts to promote multiculturalism. Along with the Center, the MSC works closely and collaboratively with students, student organizations, and departments to support the unique diversity present at UNC Charlotte and the Charlotte community.

The Multicultural Resource Center is located in the Cone Center, 3rd Floor. For more information, please call 704-687-3856 or visit online at http://mrc.uncc.edu.

VENTURE

Venture offers experiential learning, non-credit courses and workshops in outdoor settings. Activities include weekend trips in a variety of outdoor sports from backpacking to kayaking, and programs at our on-campus team development course, high ropes team challenge course, and indoor climbing wall. Venture programs are modeled on Outward Bound and are designed to facilitate individual growth through physical challenge, group interaction, and personal reflection. VOLTAGE (Venture Outdoor Leadership Training and Group Experience) trains student leaders to instruct Venture Programs. Venture houses a resource library to help individuals plan their own trips. Outdoor camping gear can be rented.

Venture also offers courses for academic credit through the Department of Kinesiology. Each fall, a four-credit course, Wilderness Experience, offers an adapted Outward Bound experience presenting a series of increasing challenges. A variety of one- and two-credit outdoor activity courses is also offered. For additional details, see the descriptions for EXER courses, visit http://venture.uncc.edu, or contact the Venture Program (704-687-2486) in the Cone University Center.

STUDENT ORGANIZATIONS

The University has over 250 student organizations that help meet the academic, social, political, and religious needs of UNC Charlotte students. There are many benefits to joining a student organizations, including making new friends, developing new skills and abilities, working as part of a team, learning to set and achieve goals, sharing your time and talents, as well as having fun. The Office of Student Activities encourages you to enhance your education at UNC Charlotte by becoming involved. Contact the Student Office at 704-687-3181 in the Cone University Center for a listing of the student organizations registered by the Student Government Association. A listing of all student organizations is available online at http://studentorgs.uncc.edu.

HONOR SOCIETIES

The following is a list of national/international honor societies that have chapters at UNC Charlotte to recognize achievement in the disciplines indicated. Further information on each organization is available from the Department or College offering the discipline.

Alpha Delta Mu, national social work honor society
Contact: Department of Social Work
Alpha Phi Sigma, national honor society for the criminal justice sciences
Contact: Department of Criminal Justice
Alpha Sigma Lambda, national honor society for non-traditional students
Contact: Office of Adult Students and Evening Services
Beta Alpha Psi, national accounting honor society
Contact: Department of Accounting
Beta Beta Beta, national biology honor society
Contact: Department of Biology
Chi Epsilon, national civil engineering honor society
Contact: Department of Civil Engineering
Chi Sigma Iota, international honor society for counselors
Contact: Department of Special Education and Child Development
Gamma Theta Upsilon, international geography honor society
Contact: Department of Geography and Earth Sciences
Golden Key, national honor society (all disciplines)
Contact: Deb Sharer
Kappa Delta Pi, international honor society in education
Contact: College of Education
Lambda Pi Eta, national communication honor society
Contact: Department of Communication Studies
National Society of Collegiate Scholars, national honor society for first and second-year students
Contact: Dean of Students Office
Omicron Delta Kappa, national leadership honorary
Contact: Vice Chancellor for Student Affairs
Order of Omega, national Greek honorary
Contact: Assistant Dean of Greek Life
Phi Beta Delta, honor society for international scholars
Contact: Office of International Programs
Phi Kappa Phi, national honor society (all disciplines)
Contact: Office of Academic Affairs
www.sco.uncc.edu/phikappaphi
Phi Sigma Tau, international philosophy honor society
Contact: Department of Philosophy
Pi Alpha Alpha, national public affairs/public administration honor society (for graduate students)
Contact: The Graduate School
Pi Sigma Alpha, national political science honor society
Contact: Department of Political Science
Psi Chi, national psychology honor society
Contact: Department of Psychology
Sigma Iota Epsilon, national management honor society
Contact: Department of Management
Sigma Pi Sigma, national physics honor society
Contact: Department of Physics
Sigma Tau Delta, national English honor society
Contact: Department of English
Tau Alpha Pi, national engineering technology honor society
Contact: Department of Engineering Technology
Tau Beta Pi, national engineering honor society
Contact: William States Lee College of Engineering

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Kent E. Curran, B.S.M.E., M.B.A., D.B.A.
Senior Associate Dean, Graduate School

Kathy Larson, B.S.
Director of Development, Graduate School

Susan M. Sell, A.B., Ph.D.
Associate Dean, Graduate School

Greet Provoost, B.A.
Assistant Dean, Graduate School

Vacant
Assistant Dean, Graduate School

Johnna W. Watson, A.A., B.A., M.A.
Associate Dean, Graduate School

BUSINESS AFFAIRS

Elizabeth A. Hardin, B.B.A., M.B.A.
Vice Chancellor

Keith N. Wassum, B.A., M.B.A.
Associate Vice Chancellor, Business Services

Philip M. Jones, Jr., B.S., M.S., P.E.
Associate Vice Chancellor, Facilities Management

Susan Brooks, B.S., M.B.A.
Associate Vice Chancellor, Finance

Gary W. Stinnett, B.Ed., M.A.
Associate Vice Chancellor, Human Resources

Marlene E. Hall, B.S.
Director, Police and Public Safety

Randal S. Duncan, B.B.A.
Director, Purchasing

Thomas E. York, B.A., M.A.
Director, Internal Audit

Gina C. Smith, B.A.
Interim Director, Systems Development

Morgan G. Roseborough, B.S., M.Ed.
Director, Business Continuity Planning

Brandon E. Gilliland, B.B.A., M.B.A.
Controller

Sherrie R. High, B.S., C.P.A.
Budget Officer

Stephen E. Selby, M.B.A.
Sponsored Programs Financial Manager

John A. Fessler, B.S., M.S., M.B.A., P.E.
Director, Capital Planning and Construction

William M. Fake, B.S., M.Arch
Director, Engineering Services

Laurance Howell, B.S., M.S.
Director, Maintenance and Operations

Melanie E. Witherspoon, B.A., M.P.A.
Administrative Officer

Charles W. Seigler, B.S., M.A.
Safety Director

DEVELOPMENT AND ALUMNI AFFAIRS

Niles Sorensen, B.S.
Vice Chancellor for Development and Alumni Affairs

Laura C. Simic, B.A., M.S.
Associate Vice Chancellor for Development

Stephanie B. Cole, B.A.
Director of Development Services

Carl E. Johnson, B.A., M.Div., Ph.D.
Director of Gift Planning

Nick McEntire, B.S., B.A.
Interim Director of Alumni Affairs

Octavia Gayle Sims, B. S.
Director of Corporate and Foundation Relations

Bobby A. Prince, B.B.A.
Director of Major Gifts

STUDENT AFFAIRS

Vacant
Vice Chancellor for Student Affairs

Eileen Apke, R.N.
Associate Director, Administration, Student Health Services

Ann Benson, B.S.
Director, Conferences, Reservations and Event Services, Cone University Center

Allan P. Blattner, B.A., M.Ed.
Associate Director, Staff and Student Development, Housing and Residence Life

Matthew T. Boyer, B.S., M.S.
Associate Director, Intramural Sports and Special Events, Recreational Services

R. Scott Cato, B.S., M.A.
Associate Director, Operations, Cone University Center

Alicia N. Clapp, B.A.
Director, Conference Services, Cone University Center

Theodore W. Elling, B.A., M.S., Ed.D.
Associate Vice Chancellor

Frank Fleming, B.S., M.Ed.
Associate Director, Business Services, Housing and Residence Life

James M. Hoppa, B.S., M.S.
Assistant Vice Chancellor for University Center and Recreational Facilities

Terrie V. Houck, B.S., M.Ed.
Director, Recreational Services

Michele M. Howard, B.S., M.Ed., Ed.D.
Associate Vice Chancellor and Dean of Students

Robert L. Jones, M.D.
Medical Director, Student Health Services

Marcia Kennard Kiessling, B.A., M.S.
Director, Office of Student Activities

Arthur A. Kohn, A.B., B.A., M.Ed.
Director, Venture

Rebecca MacNair-Semands, B.S., M.S., Ph.D.
Associate Director, Counseling Center

Wayne J. Maikranz, B.A., M.A.
Director, Student Media, Office of Student Activities

Christine Reed Davis, B.A., M.Ed.
Associate Dean of Students

David M. Rousmaniere, B.A. M.B.A.
Director, Student Health Services

Forrest M. Shook
Associate Director, Operations Recreational Facilities Management

Mindy Sides-Walsh, B.A., M.A.
Associate Director, Leadership, Office of Student Activities

Nina D. Simmons, B.A, M.A.
Director, Recreational Facilities Management

Jacklyn A. Simpson, B.S., M.Ed.
Associate Vice Chancellor and Director, Housing and Residence Life

David B. Spano, *A.B., M.A., Ph.D*
Associate Vice Chancellor for Health Programs and Services, and Director, Counseling Center

John Storch, B.A.
Associate Director, Operations, Housing and Residence Life

Peter Thorsett, B.S.B.A., M.B.A.
Associate Director, Marketing and Technology, Housing and Residence Life

Vacant
Associate Director, Programs (CAB), Office of Student Activities

UNIVERSITY RELATIONS AND COMMUNITY AFFAIRS

David H. Dunn, B.A.
Vice Chancellor for University Relations and Community Affairs

Craig Berlin
Director, Broadcast Communications for Cable TV and Distance Education

John Bland, APR
Director, Public Relations and Marketing

Ashley Oster
Director, Community Affairs

FACULTY

(The year in parentheses represents the year of appointment)

Erskine B. Bowles (2006), *President, The University of North Carolina*, B.S., University of North Carolina at Chapel Hill; M.B.A., Columbia University

Philip L. Dubois (2005), *Chancellor, The University of North Carolina at Charlotte*, A.B., University of California-Davis; M.S., Ph.D., University of Wisconsin-Madison

Joan F. Lorden (2003), *Provost and Vice Chancellor for Academic Affairs*, B.A., The City College of New York; M.S., Ph.D., Yale University

Wayne A. Walcott (1970), *Senior Associate Provost, Academic Affairs,* B.S., Western Michigan University; M.A., Ph.D., University of Illinois at Urbana-Champaign

Lyndon Abrams (2001), *Associate Professor of Counseling,* B.S., Charleston Southern University; M.Ed., Clemson University; Ph.D., Texas A&M University-Commerce

Jeffrey Kenneth Adams-Davis (1984), *Director, English Language Training Institute, and Lecturer in ELTI,* B.A., University of North Carolina at Charlotte; M.A., University of North Carolina at Chapel Hill

Mary R. Adkins (2006), *Associate Professor and Librarian,* B.A., M.A., Marshall University; M.L.I.S., University of South Carolina

Toni Agnew (2005), *Associate Professor of Aerospace Studies,* B.S., Park College; M.A., Webster University

Gail-Joon Ahn (2000), *Associate Professor of Software and Information Systems,* B.S., Soong-Sil University, South Korea; M.S., Ph.D., George Mason University

Yildirim Aktas (1989), *Associate Professor of Physics and Optical Science*, B.S., Middle East Technical University; Ph.D., University of Missouri at Columbia

Robert Francis Algozzine (1988), *Professor of Educational Leadership,* B.S., Wagner College; M.S., State University of New York at Albany; Ph.D., Pennsylvania State University

Ana-Isabel Aliaga-Buchenau (2002), *Associate Professor of Comparative Literature,* B.A., Georg-August Universitat Gottingen; M.A., Ph.D., University of North Carolina at Chapel Hill

Craig James Allan (1992), *Associate Professor of Earth Sciences*, B.Sc., University of Manitoba; M.Sc., Trent University; Ph.D., York University

John M. Allemeier (2006), *Assistant Professor of Music,* B.M., Augustana College; M.M., Northwestern University; Ph.D., University of Iowa

Charles Michael Allen (1974), *Associate Chair, Department of Computer Science and Professor of Computer Science*, B.S.E.E., M.S.E.E., Carnegie Mellon Institute; Ph.D., State University of New York at Buffalo

Christie Hawkins Amato (1978), *Professor of Marketing*, B.S., University of Tennessee; M.S., Ph.D., University of Alabama

Louis Hawkins Amato (1980), *Professor of Economics*, A.B., Lenoir-Rhyne College; M.A., University of North Carolina at Greensboro; Ph.D., University of South Carolina

James E. Amburgey (2005), *Assistant Professor of Civil and Environmental Engineering,* B.S.C.E., University of North Carolina at Charlotte; M.S., Ph.D., Georgia Institute of Technology

Jeremy Anderson (2002), *Assistant Professor of Civil and Environmental Engineering,* B.S., North Carolina State University; M.S., Ph.D., University of Florida

Kelly Anderson (2000), *Assistant Professor of Special Education and Child Development,* B.S., M.S., Drake University; Ph.D., University of North Carolina at Greensboro

Robert Frank Anderson (1983), *Associate Professor of Mathematics*, B.S., M.S., Iowa State University; Ph.D., University of Minnesota

Benny J. Andrés, Jr. (2007), *Assistant Professor of History,* B.A., San Diego State University; M.A., Ph.D., University of New Mexico

Mary K. Anthony (2006), *Visiting Professor of School of Nursing,* B.S.N., Saint John College; M.S.N., Ph.D., Case Western Reserve University

Ahmed A. Arif (2007), *Associate Professor of Public Health Sciences,* B.S., Sindh Medical College; M.S., Western Kentucky University; Ph.D., University of Texas at Houston

Jake Armour (2005), *Lecturer of Geography and Earth Sciences,* B.S., M.S., University of New Mexico

Robert Arnold (2003), *Lecturer in English,* B.A., M.A., University of North Carolina at Charlotte

Bruce A. Arrigo (2001), *Professor of Criminal Justice,* B.A., Saint Joseph's University; M.A., Duquesne University; Ph.D., Pennsylvania State University

Theodore Self Arrington (1973), *Chair, Department of Political Science, and Professor of Political Science*, B.A., University of New Mexico; M.A., Ph.D., University of Arizona

Vasily Astratov (2002), *Associate Professor of Physics and Optical Science,* Dipl., St. Petersburg State University; Ph.D., Ioffe Physical-Technical Institute

Rebecca J. Atencio (2006), *Assistant Professor of Languages and Culture Studies,* B.A., Johns Hopkins University; M.A., Ph.D., University of Wisconsin-Madison

Robert H. Audette (1989), *Associate Professor of Reading and Elementary Education,* B.A., Fitchburg State College; M.A., Ph.D., George Peabody College

Bruce Auerbach (2002), *Chair, Department of Dance and Theatre, and Professor of Dance and Theatre,* B.A., Auburn University; M.F.A., University of Illinois at Urbana-Champaign

Judy Root Aulette (1986), *Associate Professor of Sociology and Adjunct Associate Professor of Women's Studies*, B.A., M.A., Wayne State University; Ph.D., Michigan State University

Leigh T. Ausband (2005), *Assistant Professor of Reading and Elementary Education,* B.A., Emory University; M.Ed., Lesley College; Ed.D., University of South Carolina

Joel David Avrin (1984), *Professor of Mathematics*, A.B., M.A., Ph.D., University of California-Berkeley

Cemil Aydin (2004), *Assistant Professor of History*, B.A., Bosphorus University, Turkey; M.A., Istanbul University, Turkey; Ph.D., Harvard University

Alan H. Bacot (1997), *Associate Professor of Political Science*, B.A., University of North Carolina at Chapel Hill; M.P.A., University of North Carolina at Charlotte; Ph.D., University of Tennessee

Lynne M. Bailey (2003), *Assistant Professor of Middle, Secondary, and K-12 Education*, B.A., University of South Florida; M.Ed., Ph.D., University of Central Florida

Ethan E. Balcos (2005), *Assistant Professor of Dance and Theatre,* B.A., The Colorado College, M.F.A., University of Iowa

Jeffrey D. Balmer (2006), *Visiting Assistant Professor of Architecture,* B.E.S., B.Arch., University of Waterloo; M.Arch., Iowa State University

Valerie G. Balog (2005), *Clinical Assistant Professor of Counseling,* B.S., M.A., John Carroll University; Ph.D., Kent State University

Yuhua Bao (2006), *Assistant Professor of Public Health Sciences,* B.A., Fudan University; M.A., The University of Alabama; Ph.D., The RAND Graduate School of Policy Studies

Lawrence Samuel Barden (1974), *Professor of Biology*, B.S., Hendrix College; M.S., University of Maine; Ph.D., University of Tennessee

Frank Carey Barnes (1973), *Professor of Business Information Systems and Operations Management*, B.I.E., Georgia Institute of Technology; M.B.A., Ph.D., Georgia State University

Tiffany M. Barnes (2004), *Assistant Professor of Computer Science*, B.S., M.S., Ph.D., North Carolina State University

Robert Latta Barret (1979), *Professor of Counseling,* B.A., Rhodes College; M.A.T., Vanderbilt University; M.Ed., University of North Carolina at Charlotte; Ph.D., Georgia State University

Ambrose Gerard Barry (1986), *Associate Professor of Engineering Technology*, B.S., Arizona State University; M.S., Auburn University

Jeffrey Barto (1992), *Lecturer in Kinesiology*, B.S., Slippery Rock University; M.Ed., Ph.D., University of Pittsburgh

Lonnie R. Bateman, Jr. (1996), *Instructional Technology Specialist, College of Education,* CNE, Network Systems and Services

Jose-Manuel Batista, Jr. (2003), *Assistant Professor of Spanish*, B.A., Manhattan College; M.A., Ph.D., University of Georgia

Louise Damon Baucom (1986), *Clinical Assistant Professor of Reading and Elementary Education,* B.A., Elon College; M.Ed., College of Charleston; Ph.D., University of South Carolina

Shannon L. Bauerle (2006), *Lecturer in English,* B.A., M.A., University of North Carolina at Charlotte

Andriy Baumketner (2006), *Assistant Professor of Physics and Optical Science,* M.S., Lviv State University; Ph.D., National Academy of Sciences of Ukraine

Janet Baxter (2003), *Clinical Assistant Professor in Special Education and Child Development,* B.S., University of Wisconsin-Milwaukee; M.A., University of Southern Mississippi; Ed.D., Indiana University of Pennsylvania

John R. Beattie, Jr. (1983), *Assistant Professor of Special Education and Child Development*, B.A., M.Ed., University of Virginia; Ph.D., University of Florida

Joyce Marie Beggs (1989), *Associate Professor of Management*, B.S., Concord College; M.A., Marshall University; M.B.A., West Virginia College of Graduate Studies; Ph.D., University of Tennessee

Matthew J. Belles (2005), *Lecturer in Kinesiology,* B.S., M.S., University of North Carolina at Charlotte

Elisabeth A. Benchich (2005), *Lecturer in Physics,* B.S., Vanderbilt University; M.A., University of Texas at Austin

John Francis Bender (1982), *Professor of Earth Sciences*, B.S., State University of New York at New Paltz; M.S., Pennsylvania State University; Ph.D., State University of New York at Stony Brook

Delancy H. Bennett (2007), *Lecturer in Marketing,* B.A., University of North Carolina at Chapel Hill; M.B.A., Wake Forest University

Christopher J. Beorkrem (2005), *Visiting Assistant Professor of Architecture*, B.Arch., Iowa State University; M.S., Columbia University

Malena Bergmann (2003), *Lecturer in Art,* B.F.A., University of North Carolina at Greensboro; M.F.A., University of Florida

Linda Sloan Berne (1978), *Professor of Public Health Sciences*, B.S., Mars Hill College; M.A.T., Ed.D., University of South Carolina

Surasakdi Bhamornsiri (1978), *Associate Professor of Accounting*, B.S., M.B.A., Middle Tennessee State University; D.B.A., University of Tennessee; C.P.A.

David Binkley (2000), *Associate Professor of Electrical and Computer Engineering,* B.S., M.S., Ph.D., University of Tennessee

James J. Bird (2006), *Assistant Professor in Educational Leadership,* B.S., University of Wisconsin at LaCrosse; M.A., Ph.D., Ohio State University

Jaya P. Bishwal (2005), *Assistant Professor of Mathematics,* B.S., M.S., M.Phil., Ph.D., Sambalpur University, India

Michele Bissière (1990), *Associate Professor of French*, M.A., Ph.D., University of Wisconsin at Madison

Animikh Biswas (2000), *Associate Professor of Mathematics,* B.S., M.S., Indian Statistical Institute, Calcutta; Ph.D., Indiana University

Beth E. Bjerregaard (1992), *Associate Professor of Criminal Justice*, B.S., M.S., Kent State University; Ph.D., State University of New York at Albany

Dennis Black (2001), *Assistant Professor of Dance and Theatre,* Cert., American Academy of Dramatic Arts; M.A., M.F.A., Indiana University

Donald B. Blackmon (2005), *Faculty Associate for Freshman Engineering and Advising, William States Lee College of Engineering,* B.S., The Citadel

Peter A. Blair (2006), *Lecturer in English,* B.A., Saint Vincent College; M.A., Duquesne University; Ph.D., University of Iowa

Anita Blanchard (2001), *Assistant Professor of Psychology,* B.S., M.S., University of North Carolina at Chapel Hill; M.A., Ph.D., Claremont Graduate University

Alan I. Blankley (2003), *Associate Professor of Accounting*, B.S., Houghton College; M.A., Baylor University; M.B.A., Ph.D. Texas A & M University

Cynthia Blanthorne (2000), *Assistant Professor of Accounting,* B.S., New Mexico State University; M.A., Ph.D., Arizona State University

Catherine Blat (1998), *Faculty Associate for Freshman Programs and Assessment, William States Lee College of Engineering,* B.S., M.S., University of North Carolina at Charlotte

Lloyd Blenman (1999), *Professor of Finance and Business Law*, B.Soc.Sc., University of Guyana; M.A., University of Western Ontario; Ph.D., Ohio State University

Kristie R. Blevins (2005), *Assistant Professor of Criminal Justice,* B.S., M.A., East Tennessee State University; Ph.D., University of Cincinnati

Pilar Garces Blitvich (2005), *Assistant Professor of English,* B.A., M.A., and Ph.D., University of Valencia, Spain

Anita N. Blowers (1989), *Director, Office of Student Success and Retention; Associate Professor of Criminal Justice; and Adjunct Associate Professor of Gerontology*, B.A., M.A., and Ph.D., State University of New York at Albany

Arthur W. Blume (2005), *Associate Professor of Psychology,* B.S., Southwest Missouri State University; M.Div., McCormick Theological Seminary; M.S., Ph.D., University of Washington

Stephen Michael Bobbio (1993), *Professor of Electrical Engineering*, B.S., University of Detroit; Ph.D., College of William and Mary

Andy Russell Bobyarchick (1983), *Associate Professor of Earth Sciences*, B.S., Birmingham-Southern College; M.S., Virginia Polytechnic Institute and State University; Ph.D., State University of New York at Albany

Charles D. Bodkin (1991), *Associate Professor of Marketing*, B.B.A., University of Notre Dame; M.B.A., University of North Carolina at Greensboro; Ph.D., Virginia Polytechnic Institute and State University

Rosemary Booth (1991), *Associate Professor of Management and Adjunct Associate Professor of Women's Studies*, B.A., Marquette University; M.B.A., Iona College; Ph.D., University of Kentucky

Kingshuk Bose (2006), *Assistant Professor of Mechanical Engineering and Engineering Science,* B.Tech., Indian Institute of Technology; M.S., The

Johns Hopkins University; Ph.D., University of Pennsylvania

Deborah Sue Bosley (1989), *Associate Professor of English*, B.A., M.A., University of Illinois; Ph.D., Illinois State University

Kenneth L. Bost (1998), *Belk Distinguished Professor of Biology*, B.S., University of North Carolina at Chapel Hill; Ph.D., University of Mississippi Medical Center

James Douglas Bowen (1996), *Associate Professor of Civil and Environmental Engineering,* B.A., Duke University; M.S., Vanderbilt University; Ph.D., Massachusetts Institute of Technology

David M. Boyajian (2003), *Assistant Professor of Civil and Environmental Engineering*, B.S., M.S., California State University; M.S., Ph.D., West Virginia University

Alice Suzanne Boyd (2002), *Assistant Professor of Social Work,* B.A., University of Virginia; M.S.W., Ph.D., Virginia Commonwealth University

Robert Franklin Brabham, Jr. (1969), *Associate University Librarian for Special Collections and Professor,* B.A., Furman University; M.A., University of North Carolina at Chapel Hill; M.Ln., Emory University

Nicholas C. Bradick (2006), *Lecturer in Finance and Business Law,* B.S., Florida State University; M.S., Rollins College

Alison D. Bradley (2006), *Assistant Professor and Librarian,* B.A., McGill University; M.S.L.S., University of North Carolina at Chapel Hill

Jennifer I. Braganza (2006), *Faculty Associate for Freshman Engineering and Director of MAPS Program, William States Lee College of Engineering,* B.S.E., University of Michigan; M.S.E., University of Illinois at Chicago

William Pew Brandon (1994), *Metrolina Medical Foundation Distinguished Professor of Public Policy on Health and Professor of Political Science,* B.A., Johns Hopkins University; M.Sc., University of London; M.P.H., University of North Carolina at Chapel Hill; Ph.D., Duke University

Lilian B. Brannon (1998), *Professor of English, and Professor of Middle, Secondary, and K-12 Education*, B.A., Converse College; M.A., Sam Houston State University; Ed.D., Texas A&M University, Commerce

Edwin Rollin Braun (1988), *Associate Professor of Engineering Technology*, B.S., St. Louis University; M.S., Polytechnic Institute of Brooklyn

Elizabeth E. Breen (2004), *Lecturer in Accounting*, B.S., M.Acc., Florida State University

Saul Brenner (1965), *Professor of Political Science*, B.A., Brooklyn College; L.L.B., Columbia University; M.A., Brooklyn College; Ph.D., New York University

Susan C. Brenner (1991), *Associate Professor of Art*, B.F.A., San Francisco Art Institute; M.F.A., University of Southern California

Dale Arthur Brentrup (1989), *Professor of Architecture*, B.Arch., Arizona State University; M.Arch., University of California-Berkeley

Anthony Brizendine (2002), *Chair, Department of Engineering Technology, and Professor of Engineering Technology,* B.S., Bluefield State College; M.S., Virginia Polytechnic Institute and State University; Ph.D., West Virginia University

Olin Broadway (2000), *Executive in Residence and Lecturer in Information Technology,* B.S., Wake Forest University

Diane K. Brockman (2004), *Associate Professor of Anthropology*, M.A., San Diego State University; M.A., Ph.D., Yale University

David Brodeur (2000), *Assistant Professor of Art,* B.S., Southern Connecticut State University; M.F.A., University of Wisconsin

Charles J. Brody (2001), *Chair, Department of Sociology and Anthropology, and Professor of Sociology,* B.A., Loyola University of the South; M.A., University of New Orleans; Ph.D., University of Arizona

Jessica E. Broome (2006), *Lecturer in School of Nursing,* A.D.N., Central Piedmont Community College; B.A., Catawba College; M.S.N., University of Phoenix

Diane Browder (1998), *Lake and Edward J. Snyder Distinguished Professor of Special Education, Department of Special Education and Child Development*, B.A., Duke University; M.Ed., Ph.D., University of Virginia

Banita White Brown (1988), *Associate Professor of Chemistry*, B.S., Furman University; Ph.D., University of Miami

Cheryl Luvenia Brown (1982), *Associate Professor of Political Science*, B.A., University of Florida; M.A., Ph.D., University of Michigan

Lesley A. Brown (1996), *Director, Office of Proposal Development, and Adjunct Assistant Professor of English,* B.S.E., M.A., Emporia State University

Mary M. Brown (2007), *Professor of Political Science,* B.S., University of Maryland; M.P.A., University of Oklahoma; D.P.A., The University of Georgia

Meriam Brown (1991), *Lecturer, English Language Training Institute,* B.A., University of Houston; M.Ed., University of North Carolina at Charlotte

Robert A. Brown (2000), *Lecturer in English,* B.A., M.A., University of North Carolina at Charlotte

Keith Bryant (2000), *Lecturer in Art,* B.F.A., Colorado State University; M.F.A., Cranbrook Academy of Art

Edward Brynn (1999), *Teaching Professor of History,* B.S.F.S., Georgetown University; M.A., Ph.D., Stanford University; M.Litt., Ph.D., Trinity College, University of Dublin

Nishi S. Bryska (1996), *Lecturer in Biology,* B.S., M.A., Western Michigan University

Kimberly Ann Buch (1987), *Associate Professor of Psychology,* B.S., M.A., Western Kentucky University; Ph.D., Iowa State University

Jurgen Buchenau (1998), *Director of Latin American Studies and Professor of History,* B.A., University of Cologne; M.A., Ph.D., University of North Carolina at Chapel Hill

Sharon K. Bullock (2007), *Lecturer in Biology,* B.S., North Carolina State University; Ph.D., University of North Carolina at Chapel Hill

Lon E. Bumgarner (2003), *Lecturer in Dance and Theatre,* B.A., University of North Carolina at Charlotte; M.F.A., Virginia Commonwealth University; M.F.A., University of South Carolina

Ann Burlein (2002), *Associate Professor of Religious Studies,* B.A., St. John's College-Annapolis; M.A., University of Chicago; Ph.D., Duke University

Charles Alan Burnap (1982), *Associate Professor of Mathematics,* B.S., Rensselaer Polytechnic Institute; A.M., Ph.D., Harvard University

Hughlene A. Burton (1996), *Associate Professor of Accounting,* B.S., Wake Forest University; Ph.D., The University of Alabama

Richard Buttimer (2002). *Professor of Finance and Business Law,* B.B.A., Ph.D., University of Georgia

Nan Aline Byars (1993), *Professor of Engineering Technology,* B.S., Clemson University; M.S., West Virginia University

Wei Cai (1989), *Professor of Mathematics,* B.S., M.S., University of Science and Technology of China; M.S., Ph.D., Brown University

Zongwu Cai (1998), *Professor of Statistics,* B.S., China University of Geosciences; M.S., Hangzhou University; Ph.D., University of California-Davis

Lawrence Gibson Calhoun, Jr. (1973), *Professor of Psychology,* B.A., St. Andrews Presbyterian College; M.A., Xavier University; Ph.D., University of Georgia

Mary Lynne Calhoun (1982), *Dean, College of Education, and Professor of Education,* A.B., Randolph-Macon Woman's College; M.Ed., Ph.D., University of Georgia

Fred H. Campbell (2003), *Clinical Professor of Marketing,* B.S., Pfeiffer College; M.B.A., University of Georgia; Ph.D., University of North Carolina at Greensboro

Gloria Campbell-Whatley (2003), *Associate Professor of Special Education and Child Development,* B.A., Dillard University; M.A., University of Alabama at Birmingham; Ed.D., University of Alabama

Harrison S. Campbell, Jr. (1996), *Associate Professor of Geography,* B.A., Clark University; M.A., Ph.D., University of Illinois at Urbana-Champaign

William L. Campbell (2004), *Assistant Professor of Music,* B.M., M.M., University of North Texas; D.M.A., University of Illinois at Urbana-Champaign

Arnold Augustus Cann, Jr. (1975), *Professor of Psychology,* B.A., Northeastern University; Ph.D., Indiana University

Yang Cao (2003), *Assistant Professor of Sociology,* M.A., Ph.D., Cornell University

Clifford M. Carlin (1990), *Lecturer in Chemistry, Senior Instrument Analyst,* B.S., Ph.D., North Carolina State University

Jeffrey M. Carlini (2005), *Lecturer in Accounting,* B.S, M.S., Lehigh University

Kelly Jean Carlson-Reddig (1992), *Associate Professor of Architecture,* B.Arch., Texas Tech University; M.E.Des., Yale University

Joanne G. Carman (2005), *Assistant Professor of Political Science,* B.A., Hartwick College; M.A., Ph.D., State University of New York at Albany

Claudio Carpano (1990), *Associate Professor of Management,* D.P., State University of Rome; M.B.A., Southeastern Louisiana University; Ph.D., University of South Carolina

Lee Casperson (2004), *Chair, Department of Electrical and Computer Engineering and Professor of Electrical and Computer Engineering,* B.S., Massachusetts Institute of Technology, B.S., Ph.D., California Institute of Technology

Diane Cassidy (2003), *Senior Lecturer in Computer Science,* B.S., M.S., Pace University

Nicholas J. Caste (1996), *Lecturer in Philosophy,* B.A., State University of New York at Stony Brook; M.A., Ph.D., Emory University

Jack Miller Cathey (1988), *Graduate Coordinator and Associate Professor of Accounting,* B.S., Wake Forest University; M.Acc., Ph.D., Virginia Polytechnic Institute and State University; C.P.A.

Tara L. Cavalline (2006), *Lecturer in Engineering Technology,* B.S., M.S., Pennsylvania State University

Deborah Ceglowski (2002), *Associate Professor of Special Education and Child Development,* B.A.,

Johnson State College; M.Ed., Harvard University; Ph.D., University of Illinois at Urbana-Champaign

David John Chadwick (2005), *Assistant Professor of Earth Sciences,* B.S., James Madison University; M.S., Northern Arizona University; Ph.D., University of Florida

Jeong-Lim Chae (2006), *Assistant Professor of Mathematics and Statistics,* B.S., Seoul National University; M.S., Indiana University; Ph.D., The University of Georgia

Marvin W. Chapman II (2003), *Clinical Assistant Professor of Reading and Elementary Education*, B.A., Wofford College; M.A. Western Carolina University; Ph.D., University of North Carolina at Chapel Hill

Keh-Hsun Chen (1978), *Director of IT Ph.D. Program and Graduate Coordinator, Department of Computer Science, and Professor of Computer Science*, B.S., Taiwan Cheng-Kung University; M.S., National Tsing Hua University; Ph.D., Duke University

Shen-En Chen (2005), *Assistant Professor of Civil and Environmental Engineering,* B.S.C.E., M.S.C.E., Ph.D., West Virginia University

Zhiwei Chen (2006), *Visiting Assistant Professor of Mathematics and Statistics,* B.A., Central University of Finance and Economics; Ph.D., University of Maryland-College Park

Harry Ira Chernotsky (1978), *Director, International Studies and Professor of Political Science*, B.A., M.A., Ph.D., Rutgers University

Harischandra Prasad Cherukuri (1997), *Associate Professor of Mechanical Engineering,* M.S., Montana State University, Ph.D., University of Illinois

Maria C. Chiarella (2006), *Lecturer in Psychology,* B.A., Central College; M.S., Ph.D., Colorado State University

Kenneth Chilton (2002), *Assistant Professor of Geography and Earth Sciences,* B.A., Centre College; M.P.A., Ph.D., University of Louisville

Robert K. Christenson (2006), *Lecturer of Political Science,* B.A., J.D., M.P.A., Brigham Young University; Ph.D.., Indiana University-Bloomington

Bei-Tseng Bill Chu (1988), *Chair, Department of Software and Information Systems, and Professor of Software and Information Systems*, B.S., M.S., Ph.D., University of Maryland

Victor Vincent Cifarelli (1995), *Associate Professor of Mathematics,* B.S., University of Connecticut; M.S., Ph.D., Purdue University

Paul Clark (2000), *Assistant Professor of Architecture,* M.S., University of Cincinnati; Ph.D., University of Pennsylvania

Steven Clark (2002), *Assistant Professor of Finance and Business Law,* B.A., Valdosta State University; M.A., University of Georgia; Ph.D. (Economics) and Ph.D. (Mathematics), University of Virginia

Mark G. Clemens (1996), *Professor of Biology,* B.S., Ph.D., St. Louis University

Betsy Cochran (2001), *Lecturer in English,* B.A., University of North Carolina at Chapel Hill; M.A., University of North Carolina at Charlotte

Maren J. Coffman (2004), *Lecturer in School of Nursing*, A.S., B.S.N., Weber State University; M.S.N., Syracuse University; Ph.D., University of Connecticut

Robin Noelle Coger-Simmons (1996), *Professor in Mechanical Engineering,* B.S., Cornell University; M.S., Ph.D., University of California-Berkeley

Richard Alan Cohen (1994), *Isaac Swift Distinguished Professor of Judaic Studies and Professor of Religious Studies,* B.A., Pennsylvania State University; M.A., Ph.D., State University of New York at Stony Brook

Robert Joseph Coleman (1970), *Professor of Electrical and Computer Engineering*, B.S.E.E., M.S., Ph.D., Auburn University

Cynthia C. Combs (1989), *Bonnie E. Cone Distinguished Professor of Teaching, Department of Political Science, and Professor of Political Science*, B.A., M.A., Appalachian State University; Ph.D., George Washington University

Richard Monroe Conboy (1970), *Associate Dean, Belk College of Business, and Associate Professor of Management*, B.S.B.A., Old Dominion University; M.B.A., Ph.D., Virginia Polytechnic Institute and State University

John Edward Connaughton (1978), *TIAA-CREF Professor of Economics*, B.A., Boston State College; M.A., Ph.D., Northeastern University

Paula T. Connolly (1991), *Associate Professor of English, and Adjunct Assistant Professor of Women's Studies*, A.B., M.A., Boston College; Ph.D., University of Massachusetts at Amherst

James M. Conrad (2003), *Associate Professor of Electrical and Computer Engineering*, B.S., University of Illinois Urbana-Champaign; M.S., Ph.D., North Carolina State University

James Richard Cook (1980), *Associate Professor of Psychology*, A.B., Ph.D., Indiana University

Leslie Susan Cook (2004), *Assistant Professor of Middle, Secondary, and K-12 Education*, B.A., The University of Georgia; M.S., University of Tennessee at Knoxville; Ph.D., The University of Georgia

Nancy L. Cooke (1984), *Associate Professor of Special Education and Child Development,* B.S., M.A., Ph.D., Ohio State University

Brian T. Cooper (1997), *Associate Professor of Chemistry*, B.S., Purdue University; Ph.D., University of Arizona

William Douglas Cooper (1985), *Professor of Business Information Systems and Operations Management*, B.S., M.S., Ph.D., North Carolina State University

Carlos M. Coria-Sanchez (2001), *Associate Professor of Spanish*, B.A., Georgia State University; M.A., Ph.D., University of Georgia

Mitchell L. Cordova (2005), *Chair, Department of Kinesiology and Associate Professor of Kinesiology,* B.S., East Stroudsburg University; M.A., Indiana State University; Ph.D., The University of Toledo

Judith B. Cornelius (2005), *Assistant Professor of School of Nursing,* B.S.N., Hampton Institute; M.S.N., Hampton University; D.N.Sc., Rush University

Thomas Michael Corwin (1974), *Professor of Physics and Optical Science*, B.S., Tulane University; M.S., Johns Hopkins University; Ph.D., Georgia Institute of Technology

Charisse TiaMaria Coston (1992), *Associate Professor of Criminal Justice*, A.A., Ohio University; B.S., University of Cincinnati; M.A., Ph.D., Rutgers University

David S. Cottrell (2005), *Assistant Professor of Engineering Technology,* B.S., United States Military Academy; M.S., Ph.D., Texas A&M University

Jennifer Courtney (2003), *Lecturer in English,* B.A., M.A., Virginia Polytechnic Institute and State University

Misty Cowan-Hathcock (1998), *Director, Teaching Fellows Program, and Clinical Assistant Professor of Education*, B.A., M.Ed., University of North Carolina at Charlotte

Karen Cox (2002), *Associate Professor of History,* B.A., M.A., University of North Carolina at Greensboro; Ph.D., University of Mississippi

Robert W. Cox (2006), *Assistant Professor of Electrical and Computer Engineering,* B.S., M.Eng., Ph.D., Massachusetts Institute of Technology

Rosslyn J. Crandell (2006), *Lecturer in Office of Field Experiences,* B.A., North Carolina Central University; M.Ed., University of North Carolina at Charlotte

Jonathan Lake Crane (1988), *Associate Professor of Communication Studies*, B.A., Ph.D., University of Illinois at Urbana-Champaign

William B. Crockett (2004), *Publicity Manager, Department of Dance and Theatre, and Lecturer in Dance and Theatre*, B.A., Baylor University, M.F.A., The University of Alabama

Robert Thomas Croghan (1974), *Associate Professor of Theatre*, B.A., Franklin College

Linda Crossland (2002), *Academic Advisor in Arts and Sciences, and Lecturer in Arts and Sciences,* B.A., San Jose State College; M.A., Winthrop College

James Carroll Crosthwaite (1965), *Professor of Chemistry*, B.S., Anderson College; M.A., DePauw University; Ph.D., Duke University

Marvin Joseph Croy (1980), *Associate Professor of Philosophy*, B.A., Ph.D., Florida State University

John Robert Culbreth (2004), *Associate Professor of Counseling*; B.S., M.A., Appalachian State University; Ph.D., University of North Carolina at Greensboro

Kent Edward Curran (1984), *Senior Associate Dean of the Graduate School*, B.S.M.E., M.B.A., Bradley University; D.B.A., Louisiana State University

Brian Cutler (2002), *Chair, Department of Psychology, and Professor of Psychology,* B.A., University of Rochester; M.A., State University of New York at Geneseo; Ph.D., University of Wisconsin-Madison

James Cuttino (1999), *Associate Professor of Mechanical Engineering and Engineering Science,* B.S., M.S., Clemson University; Ph.D., North Carolina State University

Teresa Abi-Nader Dahlberg (1995), *Associate Professor of Computer Science,* B.S., University of Pittsburgh; M.S., Ph.D., North Carolina State University

Ming Dai (2004), *Assistant Professor of Statistics*, B.A., M.A., Peking University; Ph.D., University of South Florida

Xingde Dai (1990), *Professor of Mathematics*, B.A., Fudan University; China; M.S., Zhejiang University; M.S., University of Nebraska; Ph.D., Texas A&M University

Melissa Hayes Dancy (2004), *Assistant Professor of Physics and Optical Science*, M.S., M.A. Purdue University; Ph.D., North Carolina State University

Kasra Daneshvar (1987), *Professor of Electrical and Computer Engineering*, B.S., Louisiana State University; M.S., Ph.D., University of Illinois

Dianne Yow Daniels (1996), *Lecturer in School of Nursing,* B.S.N., M.S.N., University of North Carolina at Charlotte

John L. Daniels (2001), *Associate Professor of Civil and Environmental Engineering,* B.S., Lehigh University; M.S., Ph.D., University of Massachusetts

Mohammad R. Darafsheh (2005), *Visiting Assistant Professor of Mathematics and Statistics,* B.Sc., University of Tehran; M.Sc., Ph.D., University of Birmingham

Angela Davies (2001), *Associate Professor of Physics and Optical Science,* B.S., University of Oregon; Ph.D., Cornell University

Matthew Davies (2001), *Associate Professor of Mechanical Engineering and Engineering Science,* B.S., Carnegie Mellon University; Ph.D., Cornell University

Walter J. Davila (2002), *Associate Professor of History,* B.A., Dartmouth College; M.A., Ph.D. Brown University

Boyd Hill Davis (1970), *Bonnie E. Cone Distinguished Professor of Teaching, and Professor of English*, B.A., University of Kentucky; M.A., Ph.D., University of North Carolina at Chapel Hill

Christine S. Davis (2005), *Assistant Professor of Communication Studies,* B.A., Virginia Polytechnic Institute and State University; M.A., University of North Carolina at Greensboro; Ph.D., University of South Florida

David Christopher Davis (1989), *Professor of English*, B.A. Syracuse University; M.F.A., University of Iowa

Gregory Davis (1979), *Director, Minority Academic Services and Adjunct Assistant Professor of African-American and African Studies*, B.A., University of North Carolina at Charlotte; M.Div., Duke University; Ph.D., Union Graduate School

Peter S. Davis (2007), *Chair, Department of Management, and Professor of Management*, BSBA, Appalachian State University, Ph.D., University of South Carolina – Columbia

William Young Davis (1970), *Professor of Economics*, B.A., Furman University; Ph.D., University of Georgia

Deana K. Deason (2004), *Lecturer in Special Education and Child Development*, A.B., University of North Carolina at Chapel Hill; M.Ed., University of North Carolina at Charlotte

Concepcion deGodev (1998), *Associate Professor of Spanish*, B.A., University of Malaga; M.A., Ph.D., Pennsylvania State University

Panfilo C. Deguzman (2003), *Faculty Associate in Physics and Optical Science*, B.A., University of California-Berkeley; M.S., San Jose State University; Ph.D., University of Alabama at Huntsville

George Demakis (2002), *Associate Professor of Psychology,* B.S., Loyola University of Chicago; M.S., Ph.D., Virginia Polytechnic Institute and State University

Shaozhong Deng (2005), *Assistant Professor of Mathematics and Statistics,* B.S., Xi'an Jiatong University; M.S., Nanjing University of Aeronautics and Astronautics; M.S., Ph.D., North Carolina State University

Craig A. Depken (2007), *Associate Professor of Economics,* B.A., Ph.D., University of Georgia

Barbara DeSanto (2002), *Professor of Communication Studies,* B.S., M.S., St. Cloud State University, Ed.D., Oklahoma State University

Yuanan Diao (1996), *Professor of Mathematics,* B.S., Wuhan University; M.S., Beijing University; Ph.D., Florida State University

Warren J. Di Biase (1997), *Associate Professor of Middle, Secondary, and K-12 Education*, B.S., B.S.Ed., Ohio University; M.S.Ed., Youngstown State University; Ed.D., West Virginia University

Susan M. Diehl (2006), *Lecturer in English,* B.A., M.A., M.Ed., University of North Carolina at Charlotte

John Andrew Diemer (1988), *Professor of Earth Sciences*, B.A., Oberlin College; M.A., Ph.D., State University of New York at Binghamton

Jacqueline A. Dienemann (2003), *Professor of School of Nursing*, B.S., Mount Saint Marys College; M.S.N., Ph.D., Catholic University of America

Myra S. Dietz (2005), *Lecturer in Office of Field Experiences,* B.A., M.S., Nazareth College of Rochester

Jane Murray Dillard (1977), *Professor of Music*, B.S., M.A.Ed., East Carolina University

Rick Dior (2003), *Lecturer in Music,* B.M., Manhattan School of Music

Melody Dixon-Brown (1999), *Lecturer in Management,* B.S., Syracuse University; M.B.A., University of Delaware

Jacek Dmochowski (2003), *Associate Professor of Mathematics*, B.S., M.S., Warsaw University of Technology; Ph.D., Purdue University

John B. Doherty (2006), *Lecturer in Social Work,* B.A., Duquesne University; M.Div., St. Joseph's Seminary; M.S.W., Florida State University; Ph.D., University of Georgia

Bernadette T. Donovan-Merkert (1992), *Chair, Department of Chemistry, and Professor of Chemistry*, B.S., Duke University; Ph.D., University of Vermont

James W. Douglas (2006), *Associate Professor of Political Science,* B.A., The University of Maryland; M.P.A., The University of Baltimore; D.P.A., The University of Georgia

Alan Dow (2000), *Chair, Department of Mathematics and Statistics, and Professor of Mathematics,* B.S., M.Sc., Ph.D., University of Manitoba

Michael Scott Doyle (1993), *Professor of Spanish,* B.A., University of Virginia; M.A., Universidad de Salamanca; Ph.D., University of Virginia

Didier Dreau (2004), *Assistant Professor of Biology*, B.S., Rennes University, M.S., Blaise Pascal University, Ph.D., National College of Agriculture

Thomas David DuBois (1967), *Charles H. Stone Professor of Chemistry*, B.A., McMurry College; M.S., Ph.D., Ohio State University

Bruce W. Dudley (2003), *Faculty Associate in Physics and Optical Science*

James R. Dudley (1991), *Professor of Social Work*, B.S., M.S.W., University of Illinois; Ph.D., Bryn Mawr College

David Michael Dunaway (2005), *Assistant Professor of Educational Leadership*, B.S., Auburn University; M.A., University of South Alabama; Ed.D., Auburn University

Jennifer Duncan (2002), *Lecturer in Architecture,* A.A., Cazenovia College; M.A., M.L.S., State University of New York at Albany

Daniel Stuart Dupre (1989), *Associate Professor of History*, B.A., Macalester College; Ph.D., Brandeis University

Amy Dykeman (2002), *University Librarian and Professor,* B.A., State University of New York at Albany; M.A., Rutgers University; M.L.S., State University of New York at Albany

Elizabeth A. Eagle (2000), *Lecturer in Mathematics,* B.A., M.Ed., University of North Carolina at Charlotte

Lata Eapen (2002), *Lecturer in English,* B.A., M.A., University of Madras

Patricia Burke Easley (1972), *Associate Professor and Librarian*, B.A., State University of New York at Buffalo; M.L.S., University of North Carolina at Chapel Hill

Anita T. Easterling (2006), *Lecturer in Dance and Theatre,* B.A., Washington University; M.F.A., University of South Carolina

Matthew D. Eastin (2006), *Assistant Professor of Geography and Earth Sciences,* B.S., Purdue University; M.S., Ph.D., Colorado State University

Paula Gallant Eckard (1990), *Director, American Studies, and Lecturer in English*, B.S., B.A., M.A., M.H.D.L., University of North Carolina at Charlotte; Ph.D., University of South Carolina

David A. Edgar (2003), *Associate Professor of Art*, B.F.A., Minneapolis College of Art and Design; M.F.A., Cranbrook Academy of Art

Zachariah S. Edinger (2006), *Lecturer in School of Nursing,* B.S.N., M.S.N., University of North Carolina at Charlotte

Barbara Ann Edwards (1976), *Associate Dean, College of Education, and Associate Professor of Reading and Elementary Education,* B.S., Kent State University; M.A., Ph.D., University of South Florida

Lienne Deshaies Edwards (1982), *Associate Professor of School of Nursing*, B.S.N., University of North Carolina at Chapel Hill; M.S.N., Ph.D., University of North Carolina at Greensboro

Michael L. Eldridge (1999), *Lecturer in Philosophy,* B.A., Harding College; B.D., Yale Divinity School; M.A., Columbia University; Ph.D., University of Florida

Nabil Elias (2001), *Associate Professor of Accounting,* B.Com., University of Alexandria; M.S., Ph.D., University of Minnesota

Ahmed R. El-Ghannam (2007), *Associate Professor of Mechanical Engineering,* B.Sc., Cairo University; M.Sc., Ain Shams University; M.S.E., Ph.D., University of Pennsylvania

Mahnaz El-Kouedi (2003), *Assistant Professor of Chemistry,* B.A., International School of the Sacred Heart-Tokyo; B.Sc., American University in Cairo; Ph.D., Georgetown University

Gloria Elliot (2004), *Assistant Professor of Mechanical Engineering and Engineering Science*, B.S., University of Waterloo; M.S., Ph.D., Michigan State University

Tarra D. Ellis (2005), *Lecturer of Middle, Secondary, and K-12 Education,* A.B., University of North Carolina at Chapel Hill; M.Ed., University of North Carolina at Charlotte

Karen Elmore (2002), *Faculty Associate in Engineering for Academic and Research Programs,* B.S., M.B.A., Kent State University

Martha Eppes (2002), *Assistant Professor of Geography and Earth Sciences,* B.S., Washington and Lee University; M.S., New Mexico Institute of Mining and Technology; Ph.D., University of New Mexico

Sunil Erevelles (2002), *Associate Professor of Marketing,* B.Tech., Anna University Madras; M.A., Ph.D., Ohio State University

Horacio Vazquez Estrada (1983), *Associate Professor of Engineering Science*, B.S., University of Guadalajara; M.S., National Institute of Mexico; Ph.D., Rensselaer Polytechnic Institute

Brian J. Etherton (2003), *Assistant Professor of Geography and Earth Sciences*, B.S., The Evergreen State College; Ph.D., Pennsylvania State University

Markus Etzkorn (2005), *Assistant Professor of Chemistry,* B.S., M.S., Ph.D., Albert-Ludwigs-Universitat

Kelly J. Evans (2006), *Assistant Professor and Librarian,* A.A.S., Tidewater Community College; B.A., Virginia Wesleyan College; M.L.S., Indiana University - Bloomington

Myron L. Exum (2000), *Assistant Professor in Criminal Justice,* B.A., M.A., Wake Forest University; Ph.D., University of Maryland

Frances H. Fabian (2004), *Assistant Professor of Management*, A.B., Smith College; M.P.P., Harvard University; Ph.D., University of Texas at Austin

Jianping Fan (2001), *Associate Professor of Computer Science,* M.S., Northwestern University-China; Ph.D., Chinese Academy of Sciences

Hongbing Fang (2006), *Assistant Professor in Mechanical Engineering and Engineering Science,* B.S., Dalian University of Technology; M.S., Liaoning University of Technology; M.S., Ph.D., Purdue University

Faramarz Farahi (1990), *Chair, Department of Physics and Optical Science, and Professor of Physics and Optical Science*, B.S., Aryamehr University; M.S., University of Southampton; Ph.D., University of Kent

Mark E. Faust (2003), *Associate Professor of Psychology*, B.A., University of Washington; M.S., Ph.D., University of Oregon

Melissa Feinberg (2000), *Associate Professor of History,* A.B., Stanford University; M.A., Ph.D., University of Chicago

Anthony M.A. Fernandes (2007), *Assistant Professor of Mathematics and Statistics,* B.Sc., St. Xavier's College; M.Sc., University of Mumbai; Ph.D., University of Arizona

Susan T. Ferguson (2006), *Assistant Professor of Kinesiology,* B.S., M.S., Ph.D., University of Toledo, Ohio

Michael Fiddy (2002), *Director of the Center of Optoelectronics and Optical Communications, Professor of Physics and Optical Science, and Professor of Electrical and Computer Engineering,* B.Sc., Ph.D., University of London

Roy Russell Fielding (1978), *Lecturer in Kinesiology and Aquatics Director*, B.A., M.A., University of Northern Iowa

Richard File-Muriel (2007), *Assistant Professor of Language and Culture Studies,* B.A., Illinois State University; M.A., Ph.D., Indiana University

David M. Fillmore, Jr. (2004), *Assistant Professor of Dance and Theatre*, B.A., Moorhead State University, M.F.A., Northwestern University

John W. Fisher (2006), *Visiting Research Assistant Professor of Public Health Sciences,* B.S., U.S. Naval Academy; M.S., Massachusetts Institute of Technology; M.S., University of Notre Dame; M.S., Indiana University at South Bend; M.A., U.S. Naval War College; M.S., Ph.D., University of South Florida

Molly H. Fisher (2006), *Visiting Lecturer and Teacher in Residence in Mathematics and Statistics,* B.A., M.A., University of North Carolina at Charlotte

Stephen Michael Fishman (1967), *Professor of Philosophy*, A.B., Columbia College; M.A., Ph.D., Columbia University

Elizabeth F. Fitzgerald (2004), *Academic Advisor in Arts and Sciences*, B.A., Luther College; M.A., University of Iowa

Scott Fitzgerald (2003), *Assistant Professor of Sociology,* B.A., Luther College; M.A., Iowa State University; Ph.D., University of Iowa

Karen Elizabeth Flint (2001), *Associate Professor of History,* B.A., Lawrence University; M.A., University of California-Los Angeles

Meredith T. Flood (2003), *Assistant Professor of School of Nursing*, B.S.N., Queens College; M.S.N., University of North Carolina at Charlotte; Ph.D., University of South Carolina

Jason F. Flores (2006), *Lecturer in Biology,* B.S., College of Charleston; M.S., San Francisco State University; Ph.D., Pennsylvania State University

John Flower (1996), *Associate Professor of History,* B.A., Haverford College; M.A., Ph.D., University of Virginia

Claudia Paisley Flowers (1995), *Professor of Educational Leadership,* B.S., West Georgia College; M.Ed., Ph.D., Georgia State University

Anthony A. Fodor (2006), *Assistant Professor of Computer Science and Bioinformatics,* B.A., Vassar College; Ph.D., University of Washington

Paul W. Foos (1991), *Professor of Psychology and Adjunct Professor of Gerontology*, B.A., M.A., Ph.D., Bowling Green State University

John W. Ford (2006), *Assistant Professor of Art,* B.S., Southeast Missouri State University; M.F.A., Southern Illinois University at Edwardsville

Gwendolyn Foss (1998), *Associate Professor of School of Nursing*, B.S.N., University of Washington; M.S.N., Wayne State University; D.N.Sc., University of San Diego

James Frakes (2002), *Assistant Professor of Art,* B.A., Indiana University; M.A., M.Phil., Ph.D., Columbia University

Karina E. Franco (2005), *Faculty Associate for Recruiting and Advising, William States Lee College of Engineering,* B.A., University of Missouri; M.A., University of Iowa

Jamie S. Franki (1996), *Associate Professor of Art,* B.A., Nazareth College; M.F.A., Syracuse University

James M. Frazier (2003), *Director of Freshman Programs and Senior Lecturer in Computer Science*, B.A., M.A.T., Duke University; M.S., North Carolina State University; M.S. University of North Carolina at Charlotte; J.D., University of North Carolina at Chapel Hill

Joyce Willis Frazier (1988), *Clinical Assistant Professor of Reading and Elementary Education,* B.A., M.Ed., Marshall University; Ph.D., University of South Carolina

Heather D. Freeman (2006), *Assistant Professor of Art,* B.A., Oberlin College; M.F.A., Rutgers University

Alan Freitag (1998), *Associate Professor of Communication Studies*, B.S., University of Wisconsin, Oshkosh; M.A., Webster University; Ph.D., Ohio University

Paul C. Friday (1992), *Professor of Criminal Justice*, B.A., Drew University; M.A., Ph.D., University of Wisconsin

Nathaniel M. Fried (2006), *Assistant Professor of Physics and Optical Science,* B.A., Swarthmore College; M.S., Rensselaer Polytechnic Institute; Ph.D., Northwestern University

Miranora O. Frisch (2007), *Assistant Professor of Music,* B.A., Saint Olaf College; M.M., Cleveland Institute of Music; D.M.A., University of Minnesota

Sherell M. Fuller (2004), *Assistant Professor of Reading and Elementary Education*, B.A., M.Ed., George Mason University; Ph.D., University of Virginia

Shana Funderburk (2003), *Lecturer in Mathematics,* B.S., University of South Carolina-Spartanburg; M.A., University of North Carolina at Charlotte

Richard C. Furman (2005), *Associate Professor of Social Work,* B.A., Antioch University West; M.S.W., University of Pennsylvania; Ph.D., Yeshiva University

Susan Renee Furr (1980), *Chair, Department of Counseling, and Associate Professor of Counseling,* B.A., University of North Carolina at Greensboro; M.A., Wake Forest University; Ph.D., University of North Carolina at Chapel Hill

Owen J. Furuseth (1977), *Associate Provost for Metropolitan Studies and Extended Academic Programs, and Professor of Geography*, B.A., M.A., East Carolina University; Ph.D., Oregon State University

Shelagh Ann Gallagher (1995), *Associate Professor of Special Education and Child Development,* B.A., University of North Carolina at Chapel Hill; M.A., University of Arizona; Ph.D., University of North Carolina at Chapel Hill

Heather P. Gallardo (2004), *Assistant Professor of Communication Studies*, B.S., M.A., University of Kansas; Ph.D., The University of Arizona

Jose Gamez (2002), *Assistant Professor of Architecture,* B.A., Texas A&M University; M.Arch., University of California-Berkeley; Ph.D., University of California-Los Angeles

John Maxim Gandar (1982), *Professor of Economics*, B.A., Massey University; M.A., Victoria University; M.A., Ph.D., University of Missouri-Columbia

William J. Garcia (2004), *Lecturer in Geography and Earth Sciences*, B.A., Washington and Lee University, M.S., Fort Hays State University

Susan Jane Gardner (1990), *Associate Professor of English*, B.A., Macalester College; M.A., University of Wisconsin; Ph.D., Rhodes University

Elizabeth Gargano (2002), *Assistant Professor of English,* B.A., M.A., University of Pittsburgh; M.F.A., University of Massachusetts; Ph.D., University of Virginia

Laurie Ann Boyer Garo (1996), *Lecturer in Geography,* B.A., University of California-Los Angeles; M.A., University of Wisconsin at Madison

Jane F. Gaultney (1992), *Associate Professor of Psychology*, B.A., Palm Beach Atlantic College; M.A., Ph.D., Florida Atlantic University

William Carroll Gay (1980), *Professor of Philosophy*, B.A., Carson-Newman College; Ph.D., Boston College

Greg J. Gbur (2004), *Assistant Professor of Physics and Optical Science*, B.A., The University of Chicago; M.A., Ph.D., University of Rochester

Christopher C. Gee (2007), *Lecturer in Biology,* B.S., Tufts University; M.S., University of South Carolina; Ph.D., The Johns Hopkins University

Gary Gehrig (2002), *Assistant Professor of Engineering Technology,* B.S., Brigham Young University; M.S., University of Colorado at Denver

Ioan Gergely (1998), *Associate Professor of Civil and Environmental Engineering*, Dipl.Ing., Technical Institute of Cluj-Napoca; M.Sc., Ph.D., University of Utah

Cynthia J. Gibas (2005), *Associate Professor of Computer Science and Bioinformatics,* B.A., Lawrence University; Ph.D., University of Illinois at Urbana-Champaign

Virginia Gil-Rivas (2003), *Assistant Professor of Psychology*, B.A., Universidad Veracruzana; M.A., California State University-Dominguez Hills; Ph.D., University of California-Irvine

Jaesook L. Gilbert (2006), *Assistant Professor of Special Education and Child Development,* A.B., M.A., Washington University; Ph.D., University of Illinois at Urbana-Champaign

David Clark Gilmore (1979), *Associate Professor of Psychology*, B.A., Capital University; M.A., Ph.D., Ohio State University

Lon Howard Godfrey (1975), *Professor of Accounting,* B.S., Mississippi College; M.Acc., University of Mississippi; Ph.D., University of Alabama; C.P.A.

Yuri Godin (2003), *Assistant Professor of Mathematics*, M.S., St. Petersburg State Technical University; D.Sc., Technion-Israel Institute of Technology

Maja Godlewska (2004), *Assistant Professor of Art*, M.F.A., Academy of Fine Arts, Wroclaw, Poland

R. Kenneth Godwin (2001), *The Marshall A. Rauch Distinguished Professor of Political Science,* B.A., Wake Forest University; M.A., University of New Mexico; Ph.D., University of North Carolina at Chapel Hill

David Reed Goldfield (1982), *Robert Lee Bailey Professor of History*, B.A., Brooklyn College; M.A., Ph.D., University of Maryland

Kenneth E. Gonsalves (2001), *Celanese Acetate Distinguished Professor of Polymer Chemistry,* B.S., Delhi University; M.S., Boston College; Ph.D., University of Massachusetts at Amherst

Ann Brashear Gonzalez (1990), *Professor of Spanish*, B.A., University of North Carolina at Chapel Hill; M.A., Ph.D., University of South Carolina

Julie M. Goodliffe (2006), *Assistant Professor of Biology,* B.S., Carnegie Mellon University; Ph.D., Johns Hopkins University

Cloyd Goodrum (2003), *Lecturer in Computer Science,* B.S., University of North Carolina at Charlotte; M.A., University of North Carolina at Chapel Hill

Paula Ann Goolkasian (1974), *Professor of Psychology*, B.A., Emmanuel College; M.A., Ph.D., Iowa State University

Alexander Gordon (2006), *Assistant Professor of Mathematics and Statistics,* M.S., Moscow State University; Ph.D., Moscow Institute of Electronic Engineering

Nakia S. Gordon (2005), *Assistant Professor of Psychology,* B.S., University of Michigan; M.A., Ph.D., Bowling Green State University

Sandra Yvonne Govan (1983), *Professor of English*, B.A., Valparaiso University; M.A., Bowling Green State University; Ph.D., Emory University

Johnny Rufus Graham (1984), *Professor of Civil and Environmental Engineering*, B.S.E., M.S.E., University of North Carolina at Charlotte; Ph.D., North Carolina State University

Daniel A. Grano (2004), *Assistant Professor of Communication Studies*, B.A., University of Memphis; M.A., Ph.D., Louisiana State University

William Graves (2000), *Associate Professor of Geography*, B.A., University of North Carolina at Chapel Hill; M.A., Ph.D., University of Georgia

Lee Edward Gray (1990), *Associate Dean, College of Architecture, and Associate Professor of Architecture*, B.A., Iowa State University; M.Arch., University of Virginia; Ph.D., Cornell University

Valery Z. Grdzelishvili (2006), *Assistant Professor of Biology,* B.S., M.S., Ph.D., Moscow State University

Christopher Grech (2001), *Associate Professor of Architecture,* B.A., B.Arch., University of Liverpool

Garth L. Green (2004), *Lecturer in International Studies and Anthropology*, B.A., Duke University; M.A., Ph.D., New School for Social Research

Michael George Green (1978), *Associate Professor of Reading and Elementary Education,* B.A., University of California-Berkeley; Ed.M., Ed.D., Harvard University

John Alexander Gretes (1982), *Professor of Educational Leadership,* B.S., M.S., Old Dominion University; Ed.D., University of Virginia

Lucinda Cresswell Grey (1988), *Senior Lecturer in English*, B.A., Lake Erie College; M.A.Ed., University of North Carolina at Charlotte

Douglas Lee Grimsley (1970), *Professor of Psychology*, B.S., Florida State University; Ph.D., Syracuse University

Paula Gross (1997), *Lecturer in Biology*, B.A., Washington University; M.S., University of Georgia

Dale Allan Grote (1992), *Associate Professor of Classics*, B.A., Cornell College; M.A., University of Iowa; Ph.D., University of Wisconsin-Madison

James Grymes (2002), *Assistant Professor of Music,* B.M., Virginia Commonwealth University; M.M., Ph.D., Florida State University

Robert Earl Guinn (1976), *Associate Professor of Accounting*, B.A., Carson-Newman College; M.A., Ph.D., University of Alabama; C.P.A.

Donna Gunter (2001), *Associate Professor and Librarian,* B.A., UNC Charlotte; M.A., Clemson University; M.L.S., University of South Carolina

Nancy A. Gutierrez (2005), *Dean, College of Arts and Sciences;* B.A., Denison University; M.A., The University of Chicago; Ph.D., The University of Chicago

Aaron C. Gwyn (2003), *Assistant Professor of English*, B.A., East Carolina University; M.A., Oklahoma State University; Ph.D., University of Denver

Mirsad S. Hadzikadic (1987), *Dean, College of Computing and Informatics*, B.S., M.S., University of Banja Luka; Ph.D., Southern Methodist University

Ashley Hagler (2005), *Lecturer of Biology,* B.S., M.A., Univeristy of North Carolina Chapel Hill

Randal K. Haldeman (2004), *Assistant Professor of Music*, B.M., University of Wisconsin-Whitewater; M.M., Northwestern University; Ph.D., Florida State University

Barry H. Hale (2000), *Assistant Professor of Military Science,* A.A., Midlands Technical College; B.A.I.S., University of South Carolina

Arnold Halperin (1986), *Lecturer, English Language Training Institute,* B.A., M.A., University of North Carolina at Charlotte

Charles A. Hamaker (1998), *Associate University Librarian for Collections and Technical Services and Professor,* B.S., Eastern Illinois University; M.L.S., Brigham Young University

Juliane Hammer (2006), *Assistant Professor of Religious Studies,* M.A., Ph.D., Humboldt University

Cynthia Hancock (2006), *Lecturer in Gerontology,* B.S., Shepherd College; M.A., Ph.D., University of North Carolina at Chapel Hill

Dawson R. Hancock (1994), *Chair, Department of Educational Leadership, and Associate Professor of Educational Leadership,* B.S., United States Military Academy; M.Ed., M.A., University of North Carolina at Chapel Hill; Ph.D., Fordham University

Stephen D. Hancock (2004), *Assistant Professor of Reading and Elementary Education*, B.A., M.T., Virginia Commonwealth University; Ph.D., Ohio State University

Sandy H. Hanson (2000), *Lecturer in Communication Studies,* B.S., Louisiana State University; M.S., Florida State University

Adam P. Harbaugh (2005), *Assistant Professor of Middle, Secondary, and K-12 Education,* B.S., Armstrong State College; M.A., East Carolina University; M.Ed., Ph.D., Texas A&M University

Sonya R. Hardin (1998), *Associate Professor of School of Nursing,* B.S.N., M.S.N., University of North Carolina at Charlotte; M.B.A., M.H.A., Pfeiffer College; Ph.D., University of Colorado Health Sciences Center

Yogeshwar Hari (1978), *Professor of Mechanical Engineering and Engineering Science*, B.S.M.E., Punjab University; M.S.M.E., Ph.D., Purdue University; P.E.

Anne D. Harley (2006), *Assistant Professor of Music,* B.A., Yale University; M.M., Ph.D., Boston University

Amanda Harmon (1970), *Associate Professor and Librarian*, B.A., M.S.L.S., Syracuse University; M.A., University of North Carolina at Charlotte

Henry L. Harris (2004), *Associate Professor of Counseling*, B.A., The University of North Carolina at Wilmington; M.Ed., The University of North Carolina at Chapel Hill; Ph.D., University of Virginia

Mary Kim Harris (1984), *Associate Professor of Mathematics,* B.S., M.Ed., Auburn University; Ed.D., University of Georgia

Andrew J. Hartley (2005), *Distinguished Professor of Shakespeare and Associate Professor of Dance and Theatre,* B.A., University of Manchester; M.A., Ph.D., Boston University

Jennifer L. Hartman (2002), *Assistant Professor of Criminal Justice,* B.A., Loyola College of Baltimore; M.S., University of Baltimore; Ph.D., University of Cincinnati

Kimberly Hartman (2000), *Associate Professor of Middle, Secondary, and K-12 Education,* B.S., University of North Carolina at Greensboro; M.S., Florida State University; Ph.D., University of North Carolina at Greensboro

Susan W. Hartman (2003), *Lecturer in School of Nursing*, B.S.N., University of North Carolina at Charlotte; M.S.N, University of South Carolina

Jessica L. Hartos (2003), *Assistant Professor of Public Health Sciences*, B.S., University of Houston Clear Lake; M.A., Ph.D., University of Houston

Richard Hartshorne (2004), *Assistant Professor of Educational Leadership*, B.S., Jacksonville University; M.Ed., Ph.D., University of Florida

Andrew R. Harver (1991), *Chair, Department of Public Health Sciences, and Professor of Public Health Sciences*, B.S., University of Washington; M.S., Ph.D., Ohio University

Mohamed-Ali Hasan (1995), *Associate Professor of Electrical Engineering,* M.S., Ph.D., Linkoping Institute of Technology

Judith Hathway (1999), *Associate Professor and Librarian,* B.S., Bradley University, M.L.S., University of Minnesota

Edwin Hauser (2000), *Director of Transportation Studies, Professor of Geography, and Professor of Civil and Environmental Engineering,* B.S., North Carolina State University; M.A., University of North Carolina at Chapel Hill; Ph.D., North Carolina State University

Frances Hawthorne (1996), *Lecturer in Art,* B.A., B.C.A., University of North Carolina at Charlotte; M.F.A., Winthrop University

Christine Haynes (2002), *Assistant Professor of History,* B.A., University of Michigan; M.A., Ph.D., University of Chicago

Tina Heafner (2002), *Assistant Professor of Middle, Secondary, and K-12 Education,* B.A., M.A., Wake Forest University; Ph.D., University of North Carolina at Greensboro

Eric Heberlig (2000), *Associate Professor of Political Science,* B.A., Franklin and Marshall College; M.A., Ph.D., Ohio State University

Alan L. Hege (2005), *Faculty Associate of Electrical and Computer Engineering and Director of the UNC Charlotte/Western Carolina University Joint Program in Electrical Engineering,* B.S., University of South Florida; M.S., Southern Illinois University at Edwardsville

Eric D. Heggestad (2005), *Assistant Professor of Psychology,* B.A., Saint Olaf College; M.A., Ph.D., University of Minnesota

Christine A. Henle (2001), *Assistant Professor of Management,* B.A., University of Northern Iowa; M.S., Ph.D., Colorado State University

Tsing-Hua Her (2003), *Assistant Professor of Physics and Optical Science*, B.S., National Tsing Hua University; Ph.D., Harvard University

Angela M. Herren (2005), *Assistant Professor of Art,* B.S., University of California Berkely; M.Phil., Ph.D., Graduate Center, City University of New York

Gabor Hetyei (2000), *Associate Professor of Mathematics,* M.S., Eotvos University-Budapest; Ph.D., Massachusetts Institute of Technology

Helene Ann Hilger (1993), *Associate Professor of Civil and Environmental Engineering,* B.A., Rutgers University; B.S., M.S., University of North Carolina at Charlotte

Bill J. Hill, Jr. (1982), *Associate Dean, College of Arts and Sciences, and Professor of Communication Studies*, B.S., Appalachian State University; M.A., Wake Forest University; Ph.D., Florida State University

Debra Hill (2000), *Lecturer in Mathematics, Math Placement Coordinator,* B.S., Appalachian State University; M.A., University of North Carolina at Charlotte

Jerre Miller Hill (1987), *Senior Lecturer in Mechanical Engineering and Engineering Science*, B.S., M.E., University of South Carolina; Ph.D., Virginia Polytechnic Institute and State University

Sarah B. Hinderliter (2006), *Lecturer in Art,* B.A., University of North Carolina at Chapel Hill; M.A., The School of the Art Institute of Chicago; M.Phil., Ph.D., Columbia University

Scott Hippensteel (2002), *Associate Professor of Geography and Earth Sciences,* B.S., Shippensburg University; M.S., Ph.D., University of Delaware

Daniel W. Hoch (2006), *Faculty Associate in Engineering Technology,* B.S., M.S., University of Wisconsin Madison

Robert John Hocken (1988), *Norvin K. Dickerson, Jr., Distinguished Professor of Precision Engineering*, B.A., Oregon State University; M.A., Ph.D., State University of New York at Stony Brook

Larry Hodges (2002), *Chair, Department of Computer Science, and Professor of Computer Science,* B.A., Elon College; M.A., Lancaster Theological Seminary; M.S., Ph.D., North Carolina State University

Linda Hofmann (2002), *Lecturer in English,* B.A., State University of New York at Binghamton; M.A., University of North Carolina at Charlotte

James K. Hogue (1999), *Associate Professor of History,* B.S., United States Military Academy; M.A., Ohio State University; M.A., Ph.D., Princeton University

Thomas J. Holt (2005), *Assistant Professor of Criminal Justice,* B.S., M.A., Ph.D., University of Missouri-Saint Louis

Rosemary L. Hopcroft (1994), *Associate Professor of Sociology,* B.A., University of Mississippi; M.A., Ph.D., University of Washington

Kristine D. Hopkins (2003), *Business Advisor and Assistant Director of Business Honors*, B.S., M.B.A., Western Carolina University

Cynthia Hopper (2001), *Lecturer and Supervisor of Student Teachers,* B.S., M.Ed., University of North Carolina at Charlotte

Edward Warren Hopper (1967), *Associate Professor of Spanish*, B.A., North Texas State University; M.A., Ph.D., University of Missouri

Carol L. Horiuchi (2005), *Visiting Assistant Professor of Architecture*, B.F.A., University of Colorado; M.A., Middlebury College; M.A., Ph.D., University of California, Santa Barbara

Timothy S. Horne (2006), *Lecturer in Communication Studies,* B.A., M.A., University of North Carolina at Charlotte

Evan Green Houston, Jr. (1974), *Professor of Mathematics*, B.A., Hendrix College; Ph.D., University of Texas at Austin

James W. Hovick (1996), *Assistant Professor of Chemistry,* B.A., Franklin and Marshall College; M.S., Ph.D., University of Michigan

Mark D. Howieson (2006), *Lecturer in Dance and Theatre,* B.F.A., Kent State University; M.F.A., Carnegie-Mellon University

Ivan Howitt (2002), *Associate Professor of Electrical and Computer Engineering,* B.S.E., M.S., Georgia Institute of Technology; Ph.D., University of California-Davis

Karen Williams Hubbard (1986), *Associate Professor of Dance*, B.A., Kent State University; M.A., Ohio State University

Tricia J. Hubbard (2005), *Assistant Professor of Kinesiology,* B.S., M.S., University of Florida; Ph.D., Pennsylvania State University

Dawn Marie Hubbs (1976), *Associate Professor and Librarian*, A.B., M.L.S., Indiana University

Tricia J. Hubbard (2005), *Director of Athletic Training and Assistant Professor of Kinesiology*, B.S, M.S., University of Florida; Ph.D., Pennsylvania State University

Larissa R. Huber (2005), *Assistant Professor of Public Health Sciences,,* B.A., Syracuse University; M.S., University of Massachusetts; Ph.D., Emory University

John Hudak (1998), *Faculty Associate, Electrical and Computer Engineering*, B.S., Wilkes University

Eldred Paschal Hudson (1988), *Associate Professor of Art*, B.F.A., University of Georgia; M.F.A., Boston University

Michael Carl Hudson (1990), *Chair, Department of Biology and Professor of Biology*, B.A., Boston University; Ph.D., University of Kansas

Yvette Maria Huet-Hudson (1991), *Professor of Biology*, B.A., University of Kansas at Lawrence; Ph.D., University of Kansas Medical Center

W. Keener Hughen (2007), *Assistant Professor of Finance and Business Law,* B.S., University of Georgia; Ph.D., University of Connecticut

Francis Montgomery Hughes (1998), *Associate Professor of Biology*, B.S., Clemson University; Ph.D., Medical University of South Carolina

Helen L. Hull (2006), *Lecturer in English,* B.A., Davidson College; M.A., University of Georgia; Ph.D., University of Maryland

Sybil Dianne Huskey (1992), *Professor of Dance*, B.F.A., M.F.A., University of Utah

Glenn Hutchinson, Jr. (2000), *Lecturer in English,* B.A., M.A., University of North Carolina at Charlotte; Ph.D., University of North Carolina at Greensboro

Charles B. Hutchison (2003), *Assistant Professor of Middle, Secondary, and K-12 Education*, B.Sc., University of Cape Coast, M.A., Oklahoma Christian University of Science and Arts Ministry, Ph.D., Georgia State University

Philip R. Ice (2007), *Clinical Assistant Professor of Middle, Secondary, and K-12 Education,* B.A., M.A., Ed.D., West Virginia University

Richard Ilson (2003), *Lecturer in Computer Science*, B.S., M.S., Massachusetts Institute of Technology

David G. Imig (2005), *Visiting Distinguished Professor,* A.B., A.M., Ph.D., University of Illinois at Urbana-Champaign

Gerald Lynn Ingalls (1973), *Chair, Department of Geography and Earth Sciences, and Professor of Geography*, B.A., University of Southwestern Louisiana; M.A., University of Florida; Ph.D., Michigan State University

Hilary Inyang (2000), *Director, Global Institute of Energy and Environmental Systems; Duke Energy Distinguished Professor of Civil and Environmental Engineering; and Professor of Earth Sciences,* B.Sc., University of Calabar, Nigeria; B.S., M.S., North Dakota State University; Ph.D., Iowa State University

Sallie Middleton Ives (1977), *Associate Professor of Geography, and Adjunct Associate Professor of Women's Studies*, B.A., M.A., University of Maryland; Ph.D., University of Illinois

Forrest Jackson (2004), *Associate Professor of Aerospace Studies,* B.S., Embry-Riddle Aeronautical University; M.B.A., Embry-Riddle Aeronautical University

Tony Eugene Jackson (1994), *Associate Professor of English,* B.A., University of South Carolina; M.A., University of Oregon; Ph.D., University of California-Los Angeles

Donald J. Jacobs (2005), *Assistant Professor of Physics and Optical Science,* A.S., Fulton-Montgomery Community College; B.S., Union College; M.S., Ph.D., Purdue University

Robin M. James (2006), *Assistant Professor of Philosophy,* B.A., Miami University; M.A., Ph.D., DePaul University

Rajaram Janardhanam (1980), *Professor of Civil and Environmental Engineering*, B.S.E., M.S., Annamalai University; Ph.D., Virginia Polytechnic Institute and State University

Harold Henry Jaus (1987), *Professor of Reading and Elementary Education*, B.S., M.S., Florida State University; Ed.D., Indiana University

Victoria Page Jaus (1988), *Director of Field Experiences; and Clinical Assistant Professor of Education, Department of Middle, Secondary, and K-12 Education,* B.A., Wesleyan College; M.S., Ed.S., Indiana University; Ph.D., University of North Carolina at Greensboro

Michael Jazzar (2003), *Assistant Professor of Educational Leadership*, B.A., M.A., Western Michigan University; Ph.D., Michigan State University

Irocus Edward Jernigan III (1989), *Associate Professor of Management*, B.S., Middle Tennessee State University; M.B.A., D.B.A., Memphis State University

Jiancheng Jiang (2007), *Assistant Professor of Mathematics and Statistics,* B.S., M.A., Ph.D., Nankai University, China

Min Jiang (2007), *Assistant Professor of Communication Studies,* B.A., M.A., Beijing Foreign Studies University, China; Ph.D., Purdue University

Monica S. Johar (2006), *Assistant Professor of Businees Information Systems and Operations Management,* B.E., University of Pune, India; M.S., Ph.D., University of Texas at Dallas

Cynthia Wolf Johnson (2006), *Associate Provost for Academic Services, and Teaching Associate Professor of Communication Studies,* B.A., Boston College; M.A., University of Maryland; Ed.D., North Carolina State University

Eric G. Johnson (2006), *Professor of Physics and Optical Science,* B.S., Purdue University; M.S., University of Central Florida; Ph.D., University of Alabama in Huntsville

Kathryn Virginia Johnson (1988), *Associate Professor of Religious Studies*, B.A., University of North Carolina at Chapel Hill; M.A., Ph.D., Harvard University

Lyman Lucius Johnson (1972), *Professor of History*, B.A., Tufts University; M.A., University of Rhode Island; Ph.D., University of Connecticut

Robert Edward Johnson (1994), *Dean, The William States Lee College of Engineering,* B.S., State University of New York at Buffalo; M.S., Ph.D., California Institute of Technology

Susan K. Johnson (1996), *Associate Professor of Psychology,* B.A., Bowdoin College; M.A., New York University; Ph.D., Rutgers University

Daniel Silas Jones, Jr. (1973), *Associate Professor of Chemistry*, B.S., Wake Forest University; A.M., Ph.D., Harvard University

Jeanneine Petersen Jones (1992), *Professor of Middle, Secondary, and K-12 Education*, B.A., Catawba College; M.Ed., Ed.D., University of North Carolina at Greensboro

Gay S. Jordan (1997), *Lecturer in Social Work*, B.A., M.S.W., University of North Carolina at Chapel Hill

Sarah L. Jordan (1997), *Associate Professor of Special Education and Child Development*, B.S., M.A., East Carolina University; Ph.D., University of Florida

Bharatkumar S. Joshi (2005), *Assistant Professor of Electrical and Computer Engineering,* M.S., Ph.D., University of Wisconsin-Milwaukee

Lubambala P. Kabengela (2006), *Faculty Associate in Engineering Technology,* B.S., University of Kinshasa; M.S., University of North Carolina at Charlotte

Yogendra Purshottam Kakad (1976), *Professor of Electrical Engineering*, B.S., University of Baroda, India; M.S., Ph.D., University of Florida

Martin Richard Kane (1995), *Associate Professor of Civil and Environmental Engineering and Adjunct Associate Professor of Gerontology,* B.S., M.S., Ph.D., Michigan State University

Brent B. Kang (2004), *Assistant Professor of Software and Information Systems*, B.S., Seoul National University; M.S., University of Maryland - College Park; Ph.D., University of California at Berkley

Fumie Kato (2002), *Assistant Professor of Japanese,* M.Ed., Ph.D., University of Sydney, Australia

Fotini G. Katsanos (2006), *Lecturer in Religious Studies,* B.A., University of North Carolina at Greensboro; M.A., University of South Carolina at Columbia

Donna M. Kazemi (2003), *Lecturer in School of Nursing*, B.S., Michigan State University; B.S.N., Grand Valley State University; M.S., Central Michigan University

Mohammad-Ali Kazemi (1982), *Associate Chair, Department of Mathematics and Statistics, and Professor of Mathematics*, B.S., Pahlavi University, Iran; M.S., Arya-Mehr University; Ph.D., University of Michigan

Russell Guy Keanini (1992), *Professor of Mechanical Engineering and Engineering Science*, B.S., Colorado School of Mines; M.S., University of Colorado; Ph.D., University of California- Berkeley

Bonnie A. Keilty (2006), *Assistant Professor of Special Education and Child Development,* B.S., State University of New York Albany; M.A., Ed.D., George Washington University

Michael John Kelly (2005), *Chair, Department of Philosophy, and Associate Professor of Philosophy*, B.A., University of Massachusetts Boston; Ph.D., Boston University

Daryl Lynn Kerr (1988), *Director, Undergraduate Student Affairs and Business Honors*, B.A., University of North Carolina at Charlotte; M.A., University of North Carolina at Chapel Hill; Ph.D., Florida State University

David S. Kerr (2005), *Associate Professor of Accounting,* B.S., Utah State; Ph.D., Michigan State University

Moutaz J. Khouja (1991), *Chair, Department of Business Information Systems and Operations Management, and Professor of Business Information Systems and Operations Management,* B.S., M.B.A., University of Toledo; Ph.D., Kent State University

Cynthia Anne Kierner (1986), *Professor of History,* B.A., McGill University; M.A., Ph.D., University of Virginia

Debbie Kilby (2003), *Lecturer in Communication Studies,* B.A., University of North Carolina at Charlotte; M.A., University of North Carolina at Greensboro

Ryan Patrick Kilmer (1999), *Associate Professor of Psychology,* B.S., University of Washington; M.A., Ph.D., University of Rochester

Do-Hong Kim (2006), *Assistant Professor in Educational Leadership,* B.A., Ewha Womans University; Ph.D., University of South Carolina at Columbia

Jeffrey T. Kimble (1999), *Associate Professor of Engineering Technology,* B.S., M.S., Eastern Kentucky University

Pamela K. King (2004), *Director of Sponsored Research and Lecturer, College of Arts and Sciences,* A.A., B.S., Ball State University; M.S., Indiana State University

Tao-Hsien (Dolly) King (2006), *Associate Professor of Finance and Business Law,* B.B.A., National Cheng-Kung University, Taiwan; M.B.A., Ph.D.,University of Wisconsin-Madison

Richard Donnel Kingsberry (2000) *Professor of Military Science,* B.S., Fayetteville State University; M.P.A., University of North Carolina at Chapel Hill

Scott P. Kissau (2006), *Assistant Professor of Middle, Secondary, and K-12 Education,* B.A.H., Queen's University, Canada; B.Ed., M.Ed., Ph.D., University of Windsor, Canada

Brian T. Kissel (2006), *Assistant Professor of Reading and Elementary Education,* B.S., Loyola University; M.Ed., University of North Florida; Ph.D., University of Virginia

Joanne S. Klein (2001), *Associate Professor and Librarian,* B.S., Clarion State College; M.L.S., University of Pittsburgh

Michael V. Klibanov (1990), *Professor of Mathematics,* M.S., Novosibirsk State University; Ph.D., Ural State University, Russia; D.S., Novosibirsk State University, Russia

Ann Kluttz (1999), *Lecturer in Art,* B.F.A., M.F.A., East Carolina University

Cyril H. Knoblauch, Jr. (1998), *Chair, Department of English, and Professor of English,* B.A., College of St. Thomas; M.A., Ph.D., Brown University

Jasleen Kohli (2004), *Assistant Professor of Spanish,* M.A., Jawaharlal Nehru University, India; M.A., Complutense University, Spain; Ph.D., University of California Riverside

Arthur Alexander Kohn (1987), *Director of Venture Program, and Lecturer in Kinesiology,* A.S., Cahrillo College; B.A., Loretto Heights College; M.Ed., University of Vermont

Gary F. Kohut (1983), *Professor of Management,* B.S., M.B.A., Youngstown State University; Ph.D., Southern Illinois University

Anthony J. Kombol (2006), *Lecturer in Software and Information Systems,* B.S., University of Wisconsin Parkside; M.S.E.E., University of Iowa

Anastasia Koralova (1999), *Senior Lecturer in Russian,* M.A., Moscow State University; Ph.D., Moscow Linguistics University

Robert Kosara (2005), *Assistant Professor of Computer Science,* M.Sc., Ph.D., Vienna University of Technology

Robert S. Kravchuk (2007), *Chair, Department of Political Science and Professor of Political Science,* B.S., University of Connecticut; M.P.A., University of Hartford; M.B.A., Columbia University; M.A., Ph.D., Syracuse University

Martha E. Kropf (2006), *Assistant Professor of Political Science,* B.A., Kansas State University; Ph.D., American University

Joanna K. Krueger (1999), *Associate Professor of Chemistry,* B.A., Kalamazoo College; M.A., Ph.D., Princeton University

Joseph B. Kuhns III (2003), *Assistant Professor of Criminal Justice,* B.A., M.A. University of South Florida; Ph.D. University of Albany

Shanti J. Kulkarni (2006), *Assistant Professor of Social Work,* B.A., Rice University; M.S.W., Ph.D., University of Texas at Austin

Ram L. Kumar (1993), *Professor of Business Information Systems and Operations Management,* B.T., Indian Institute of Technology; M.B.A., Indian Institute of Management; Ph.D., University of Maryland

Staci Kuntzman (2001), *Lecturer in Communication Studies,* B.A., M.A., Marshall University

Stephen Kuyath (2001), *Associate Professor of Engineering Technology,* B.S., M.S., University of North Carolina at Charlotte

Peter Laden (2003), *Professor of Aerospace Studies,* B.S., Nathaniel Hawthorne College; M.B.A., Webster University

Betty Ladner (1999), *Assistant University Librarian for Collections Access and Outreach Services, and*

Associate Professor, B.A., College of Mount St. Joseph; M.A., University of Chicago

Richard G. Lambert (1996), *Associate Professor of Educational Leadership,* B.S., St. Lawrence University; Ed.M., Temple University; Ed.S., Ph.D., Georgia State University

Susan Lambert (1996), *Lecturer in International Programs,* B.S., University of Michigan; M.A., University of Kentucky

Kenneth Allen Lambla (1983), *Dean, College of Architecture, and Professor of Architecture,* B.E.D., University of Kansas; M.Arch., University of California-Berkeley

Suzanne G. Lamorey (2005), *Associate Professor of Special Education,* B.A., University of California Berkeley; M.S., Arizona State University; Ph.D., University of Oregon

Larry Michael Lance (1970), *Associate Professor of Sociology,* B.A., M.A., Bowling Green State University; Ph.D., Purdue University

David Robert Langford (1994), *Associate Professor of School of Nursing,* A.S., B.S., Brigham Young University; M.S., D.N.Sc., University of California-San Francisco

Dana C. Lanham (2006), *Lecturer in Marketing,* B.S.B.A., University of Massachusetts, Amherst; M.B.A., Western New England College

Oscar E. Lansen (1994), *Lecturer in History,* B.A., B.Ed., NLO Het Mollerinstituut, The Netherlands; M.A., M.Ed., Ph.D., Katholieke Universiteit Nijmegen, The Netherlands

Gary J. Larsen (2006), *Lecturer in Dance and Theatre,* B.A., Brigham Young University; M.A., University of California; Ph.D., University of Limerick, Ireland

Pamela Sue Lassiter (2004), *Assistant Professor of Counseling,* B.A., Coker College; M.S., University of Southern Mississippi; Ph.D., Georgia State University

Celine Latulipe (2006), *Assistant Professor of Software and Information Systems,* B.A., M.Math., Ph.D., University of Waterloo

Jane Katherine Laurent (1979), *Associate Professor of History,* B.A., M.A., University of Georgia; Ph.D., Brown University

Misty Lawrence (2003), *Advisor and Lecturer in Education,* B.A., University of North Carolina at Wilmington; M.A., Appalachian State University

Kevin Lawton (2000), *Visiting Assistant Professor of Mechanical Engineering and Engineering Science,* B.S., M.S., Ph.D., University of North Carolina at Charlotte

Pamela H. Lawton (2005), *Assistant Professor of Art,* B.A., University of Virginia; M.F.A., Howard University; Ed.D., Columbia University

William Lazenby (1992), *Lecturer in English,* B.A., Limestone College; M.A., University of North Carolina at Charlotte

Jeffrey Leak (1998), *Associate Professor of English,* B.A., Campbell University; M.A., University of Delaware; Ph.D., Emory University

Larry Jackson Leamy (1988), *Professor of Biology,* B.S., Eastern Illinois University; M.S., Ph.D., University of Illinois at Urbana-Champaign

Charles Lee (1999), *Associate Professor of Mechanical Engineering and Engineering Science,* B.S., M.S., Ph.D., University of California-Berkeley

Delores H. Lee (2005), *Clinical Assistant Professor of Educational Leadership,* B.A., Johnson C. Smith University; M.Ed., Converse College; Ed.D., University of North Carolina at Charlotte

Jiyeong Lee (2004), *Assistant Professor of Geography and Earth Sciences,* M.E., Buson National University, M.C.P., Ph.D., Ohio State University

Jo Ann Lee (1983), *Associate Professor of Psychology and Adjunct Associate Professor of Gerontology,* A.B., M.S., Ph.D., University of Georgia

Seok-Won Lee (2003), *Assistant Professor of Software and Information Systems,* B.S., Dongguk University, South Korea; M.S., University of Pittsburgh; Ph.D., George Mason University

Carol B. Leeman (1997), *Lecturer in Communication Studies,* B.A., University of North Carolina at Charlotte; M.A., Wake Forest University

Richard W. Leeman (1989), *Chair, Department of Communication Studies and Professor of Communication Studies,* B.S., Shippensburg State College; M.A., Ph.D., University of Maryland

Lorrie J. Lehmann (2005), *Lecturer in Computer Science,* B.A., M.S., University of North Carolina at Charlotte

Pedram Leilabady (2005), *Lecturer of Physics and Optical Science,* B.S., Ph.D., University of Kent

Richard Andrew Lejk (1983), *Associate Dean, College of Computing and Informatics, and Associate Professor of Computer Science,* B.S., Georgia Institute of Technology; M.S.E., University of Michigan; Ph.D., Texas A&M University

Suzanne Leland (2001), *Associate Professor of Political Science,* B.S., M.S., Minnesota State University; Ph.D., University of Kansas

Janet E. Levy (1980), *Associate Professor of Anthropology,* A.B., Brown University; M.A., Ph.D., Washington University

J. Timothy Lightfoot (1996), *Professor of Kinesiology,* B.S., M.Ed., Northeast Louisiana University; Ph.D., University of Tennessee

Claude C. Lilly III (1997), *Dean, Belk College of Business, James J. Harris Chair in Insurance, and Professor of Risk Management,* B.B.A., Georgia State College; M.I., Ph.D., Georgia State University

Churlzu Lim (2006), *Assistant Professor of Engineering Management,* B.S., M.S., Korea Advanced Institute of Science and Technology; Ph.D., Virginia Polytechnic Institute and State University

Jae Hoon Lim (2006), *Assistant Professor in Educational Leadership,* B.Ed., Seoul National University of Education; M.A., Korea University; Ph.D., University of Georgia, Athens

Hwan Chyang Lin (1993), *Associate Professor of Economics,* B.A., National Chung Hsing University; M.S., Ph.D., University of Illinois at Urbana-Champaign

Zhong-jie Lin (2006), *Assistant Professor of Architecture,* B.Arch., M.Arch., Tongji University; M.S., Ph.D., University of Pennsylvania

Gaines Howard Liner (1971), *Professor of Economics,* B.S., North Carolina State University at Raleigh; M.S., Ph.D., Clemson University

Donald D. Liou (1995), *Associate Professor of Civil and Environmental Engineering Technology,* B.S.C.E., National Taiwan University; M.S., M.B.A., Ph.D., University of California-Berkeley

Zhaoyu Liu (2002), *Assistant Professor of Software and Information Systems,* B.S., University of Utah; M.S., University of Maryland; Ph.D., University of Illinois at Urbana-Champaign

Dennis R. Livesay (2006), *Associate Professor of Bioinformatics,* B.S., Ball State University; Ph.D., University of Illinois at Urbana-Champaign

Ya-yu Lo (2004), *Assistant Professor of Special Education and Child Development,* B.A., Soochow University; M.A., Ph.D., Ohio State University

Corey Robert Lock (1987), *Professor of Educational Leadership,* B.A., University of Kentucky; M.Ed., Miami University; Ph.D., Ohio State University

Dennis D. Long (2006), *Chair, Department of Social Work, and Professor of Social Work,* B.A., M.S.W., Ohio State University; Ph.D., University of Cincinnati

N. Bruce Long (2003), *Lecturer in Software and Information Systems,* B.S., Park University; M.S., Boston University

Shawn Long (2000), *Assistant Professor of Communication Studies,* B.A., M.P.A., Tennessee State University; Ph.D., University of Kentucky

Vivian Baumgardner Lord (1994), *Chair, Department of Criminal Justice, and Professor of Criminal Justice,* B.A., University of Georgia; M.A., Goddard College; Ph.D., North Carolina State University

Maryrica Lottman (2002), *Assistant Professor of Spanish,* B.A., Hollins University; M.F.A., Pennsylvania State University; M.A., Ph.D., Princeton University

Melanie Lowder (2001), *Lecturer in Biology,* Dipl., Universite d'Aix-en-Provence; B.A., M.S., University of North Carolina at Charlotte

Aidong Lu (2005), *Assistant Professor of Computer Science,* B.S., M.S., Tsinghua University; Ph.D., Purdue University

Ying Lu (2006), *Assistant Professor of Business Information Systems and Operations Management,* B.S., Sichuan University, China; M.S., Chinese Academy of Preventative Medicine; M.S., Pennsylvania State University; Ph.D., University of Wisconsin-Milwaukee

Thomas George Lucas (1983), *Professor of Mathematics,* B.S., Oklahoma Baptist University; M.A., Ph.D., University of Missouri-Columbia

Thomas Ramsey Lucas (1969), *Professor of Mathematics,* B.S., University of Florida; M.S., University of Michigan; Ph.D., Georgia Institute of Technology

Chrislyn Z. Luce (2004), *Internship Supervisor of Field Experiences and Clinical Assistant Professor of Education,* B.A., M.S., Florida State University; Ph.D., University of Southern Mississippi

Vasilije Peter Lukic (1984), *Professor of Electrical Engineering,* B.S.E.E., M.S.E.E., Sc.D., University of Belgrade

Royce Lumpkin (1998), *Chair, Department of Music, and Professor of Music,* B.M.Ed., M.M.Ed., North Texas State University; D.M.A., University of Oklahoma

Ronald F. Lunsford (1991), *Professor of English,* B.A., University of North Carolina at Charlotte; M.A., University of North Carolina at Chapel Hill; Ph.D., Florida State University

Susan H. Lynch (2006), *Lecturer in School of Nursing,* B.S.N., University of North Carolina at Greensboro; M.S.N., University of New Mexico

James Edward Lyons (1979), *Professor of Education,* B.S., Elizabeth City State University; M.A., East Carolina University; Ph.D., Ohio State University

Richard D. McAnulty (1990), *Associate Professor of Psychology,* B.A., Harding University; M.S., Northeast Louisiana University; Ph.D., University of Georgia

Sean P. McCloud (2003), *Assistant Professor of Religious Studies*, B.A., Indiana University; M.A., Miami University of Ohio; Ph.D., University of North Carolina at Chapel Hill

Ann McColl (2002), *Associate Professor of Educational Leadership,* B.A., J.D., University of North Carolina at Chapel Hill

Kathleen McCormick (2005), *Assistant Professor and Librarian,* B.A., Emory University; M.A., Boston College; M.L.I.S., Simmons College

Christopher McDaniel (2006), *Faculty Associate for Freshman Engineering and Advising, William States Lee College of Engineering, B.*S., North Carolina State University; M.S., Air Force Institute of Technology

Mary Frances McDermott-Castro (1990), *Lecturer in Spanish,* B.A., Seton Hill College; M.A., Ohio University

James Holt McGavran, Jr. (1973), *Professor of English*, B.A., The College of Wooster; M.A., Columbia University; Ph.D., University of North Carolina at Chapel Hill

Rob Roy McGregor III (1991), *Professor of Economics*, B.A., M.A., Clemson University; Ph.D., University of South Carolina

Robert A. McInnes (2004), *Assistant Professor and Librarian,* B.A., Ohio University; M.A., Wright State University; M.B.A., Baker University

Jeanne M. McIntosh (2006), *Assistant Research Professor of Psychology,* B.A., Wellesley College; M.A., Ph.D., University of California Los Angeles

Mary McKenzie (2003), *Lecturer in Sociology,* B.A., M.S., North Carolina State University

Iain McKillop (2002), *Associate Professor of Biology,* B.Sc., Ph.D., University of Sheffield

Shepherd McKinley (2003), *Lecturer in History,* B.A., Duke University; M.A., University of North Carolina at Charlotte; Ph.D., University of Delaware

Julie K. McLaughlin (2004), *Assistant Professor of Sociology*, B.A., Villanova University; M.A., Ph.D., Rutgers University

Ronald Andrew Madsen (1977), *Professor of Economics*, B.S., University of Illinois; M.B.A., D.B.A., Arizona State University

Albert Anthony Maisto (1977), *Associate Dean of the Honors College, Bonnie E. Cone Distinguished Professor of Teaching, and Professor of Psychology*, B.A., Murray State University; M.A., Ph.D., University of Alabama

Emily G. Makas (2007), *Assistant Professor of Architecture,* B.A., University of Tennessee; M.S., Columbia University; Ph.D., Cornell University

Edward George Malmgren (1976), *Associate Professor of Accounting*, B.A., Lake Forest College; M.S., Ph.D., University of Iowa; C.P.A.

Tiffany Manuel (2002), *Assistant Professor of Political Science,* B.A., University of Chicago; M.A., Ph.D., University of Massachusetts Boston

Susan J. Marchetti (2007), *Lecturer and Field Coordinator in Social Work,* B.A., M.S.W., University of Albany

Joseph C. Marinello (2006), *Lecturer in Criminal Justice,* B.A., Belmont Abbey College; M.A., University of North Carolina at Charlotte

Jonathan Marks (2000), *Professor of Anthropology,* B.A., Johns Hopkins University; M.S., M.A., Ph.D., University of Arizona

Laurence Marks (1999), *Associate Professor of Music,* B.A., San Jose State University; M.S., University of Illinois at Urbana-Champaign; D.M.A., University of Southern California

Ian Marriott (1998), *Associate Professor of Biology*, B.Sc., University of Birmingham; M.S., Ph.D., Tulane University School of Medicine

Celia B. Marshall (1999), *Lecturer in Religious Studies,* B.A., Duke University; M.A., Yale University

Thomas S. Marshall (2005), *Lecturer of Finance and Business Law,* B.B.A., Wake Forest University, M.B.A., University of Pennsylvania

Walter Eugene Martin (1979), *Associate Professor of Earth Sciences*, B.S., M.A., East Carolina University; Ph.D., University of Tennessee

Michele Matherly (2001), *Assistant Professor of Accounting,* B.B.A., M.B.A., Radford University; Ph.D., University of Alabama

Terri B. Matthews (2005), *Lecturer in Social Work,* B.A., Erskine College; M.S.W., University of South Carolina

Lawrence Mays (2004), *Professor of Computer Science*; B.A., University of Virginia; M.S., Pennsylvania State University; M.A., Temple University; Ph.D., University of Virginia

Ross K. Meentemeyer (2005), *Associate Professor of Geography and Earth Sciences; Director, Center for Applied Geographical Information Systems,* B.Sc., University of Georgia; Ph.D., University of North Carolina at Chapel Hill

Thomas Lawrence Mellichamp (1976), *Director, University of North Carolina at Charlotte Botanical Gardens, and Professor of Biology,* B.S., University of North Carolina at Charlotte; M.S., Ph.D., University of Michigan

Kirk Melnikoff (2002), *Assistant Professor of English,* B.A., Lehigh University; M.A., Ph.D., Boston University

Billy Frank Melton (1971), *Associate Professor of Physics and Optical Science*, B.S., Ph.D., Oklahoma State University

Jon Merkert (2003), *Lecturer in Chemistry, Senior Instrument Analyst*, B.S., Colorado State University; Ph.D., The University of Vermont

Mary Metzger (2004), *Assistant Professor and Librarian*, B.A., College of William and Mary; M.A., University of Alabama at Birmingham; M.L.S., Rutgers University at New Brunswick

Katherine Metzo (2003), *Assistant Professor Anthropology,* B.A., Lawrence University; M.A., Ph.D., Indiana University at Bloomington

Susan K. Michael (2006), *Lecturer in Chemistry,* B.A., Augustana College; M.S., University of North Carolina at Charlotte

Roslyn Arlin Mickelson (1985), *Professor of Sociology and Adjunct Professor of Women's Studies*, B.A., M.A., Ph.D., University of California-Los Angeles

Tammy L. Mielke (2007), *Assistant Professor of English,* B.S., Dr. Martin Luther College; M.A., Eastern Michigan University; Ph.D., Coventry University

Elizabeth R. Miller (2006), *Assistant Professor of English,* B.A., Grace College; M.A., Purdue University; M.A., Ph.D., University of Wisconsin-Madison

Joseph Jerome Miller (1978), *Lecturer in Business Law*, B.S., Pennsylvania State University; LL.M., College of William and Mary; J.D., Samford University

Martha LaFollette Miller (1976), *Professor of Spanish and Adjunct Professor of Women's Studies*, B.A., Smith College; M.A., University of Wisconsin; Ph.D., Washington University

Seyed Mehdi Miri (1987), *Associate Professor of Electrical Engineering*, B.S., Western Michigan University; M.S., Ph.D., Ohio State University

M. Grace Mitchell (2003), *Assistant Professor of Educational Leadership*, B.S., East Carolina University; M.Ed., Duke University; M.A., Ph.D., University of Virginia

Samuel T. Mitchum (2006), *Faculty Associate of Engineering Technology,* B.S., University of South Carolina; M.E., University of South Carolina; Ph.D., Virginia Commonwealth University

Candace A. Mix (2006), *Lecturer in School of Nursing,* B.S.N., Western Carolina University; M.S.N., Yale University

Gregory Mixon (1999), *Associate Professor of History*, B.A., Washington University; M.A., Ph.D., University of Cincinnati

Kelly Mizell (2002), *Lecturer in Dance and Theatre,* B.A., North Carolina State University; M.F.A., Harvard University

Stanislav A. Molchanov (1994), *Professor of Mathematics,* D.Sc., Moscow State University

Stephanie Moller (2003), *Assistant Professor of Sociology,* B.S., Guilford College; M.A., University of Delaware; M.A., University of Georgia; Ph.D., University of North Carolina at Chapel Hill

Samuel A. Monder (2005), *Assistant Professor of Languages and Culture Studies,* Ph.D., University of Buenos Aires, Argentina; Ph.D., University of California at Berkley

Linda Aderholdt Moore (1985), *Associate Professor of School of Nursing and Adjunct Associate Professor of Gerontology*, B.S.N., Duke University; M.S.N., Ed.D., University of Virginia

Peggy R. Moore (2000), *Lecturer in Special Education and Child Development,* B.A., Scarritt College; M.S., Peabody College

Tyrel Gilce Moore (1982), *Professor of Geography,* B.S., Western Kentucky University; M.S., Ph.D., University of Tennessee

Margaret Patricia Morgan (1987), *Associate Professor of English*, B.A., Kean University; M.A., University of Maryland; Ph.D., Purdue University

Chikako Mori (2006), *Lecturer in Languages and Culture Studies,* B.A., Chubu University; M.Ed., Ohio University

Jill Morin (2000), *Lecturer, English Language Training Institute,* B.A., Miami University; M.A., The University of Findlay

Dan Lincoln Morrill (1963), *Professor of History*, B.A., Wake Forest University; M.A., Ph.D., Emory University

Mark S. Morris (2003), *Assistant Professor of Architecture*, B.A., M.Arch., Ohio State University; Ph.D., University of London, England

Tama Lynn Morris (1994), *Lecturer in School of Nursing and Director of Nursing Skills Lab,* B.S.N., M.S.N.Ed., Indiana University of Pennsylvania; M.S.N., Marquette University

Edward Morse (1999), *Associate Professor of Mechanical Engineering and Engineering Science,* B.S., Swarthmore College; M.S., Ph.D., Cornell University

Michael Mosley (1971), *Associate Professor of Music*, B.Mus., Hardin-Simmons University; M.Mus., Indiana University

Anita West Moss (1977), *Professor of English*, B.A., Lambuth College; M.A., Memphis State University; Ph.D., Indiana University

Mohammad Taghi Mostafavi (1986), *Associate Professor of Computer Science*, B.S., M.S., Ph.D., Oklahoma State University

Patrick J. Moyer (1996), *Associate Professor of Physics and Optical Science,* B.S., Moravian College; M.S., Saint Bonaventure University; Ph.D., North Carolina State University

Frada Lynn Mozenter (1981), *Professor, Librarian, and Adjunct Program Associate in Women's Studies*, A.B., Temple University; M.A., University of Arizona; M.S.L.S., Drexel University

Maryann Mraz, *Assistant Professor of Reading and Elementary Education,* B.A., M.Ed., John Carroll University; Ph.D., Kent State University

Mary Ellen Muesing (2003), *Lecturer in English,* B.A., M.A., Northeastern Illinois University

Arindam Mukherjee (2002), *Assistant Professor of Electrical and Computer Engineering,* B.S., Jadavpur University, M.S., Ph.D., University of California-Santa Barbara

Brigid Ann Mullany (2004), *Assistant Professor of Mechanical Engineering and Engineering Science*, B.S., Ph.D., University College Dublin, Ireland

Edgar Gray Munday (1987), *Associate Professor of Mechanical Engineering*, B.S., M.S., Clemson University; Ph.D., Virginia Polytechnic Institute and State University;

Jennifer Ann Munroe (2004), *Assistant Professor of English*, A.M., Ph.D., University of Illinois at Urbana-Champaign

David Murphy (2001), *Associate Professor of Engineering Technology,* B.S., M.S., Eastern Kentucky University

Hattie W. Murphy (2000), *Assistant Professor of Aerospace Studies,* B.S., University of South Carolina; M.B.A., Golden Gate University; M.Ed. National-Louis University

Jeffrey Murphy (1998), *Associate Professor of Art*, B.F.A., Ohio State University; M.F.A., University of Florida

Michael D. Murphy (1996), *Lecturer in Chemistry*, B.S., University of North Carolina at Charlotte; Ph.D., University of Pennsylvania

Kayvan Najarian (2000), *Assistant Professor of Computer Science,* Sharif University of Technology, Iran; M.S., Amirkabir University of Technology, Iran; Ph.D., University of British Columbia

Asis Nasipuri (2000), *Associate Professor of Electrical and Computer Engineering,* B.Tech., Indian Institute of Technology; M.S., Ph.D., University of Massachusetts

Srila Nayak (2007), *Assistant Professor of English,* B.A., Utkal University, India; M.A., University of Delhi, India; Ph.D., Carnegie Mellon University

Hermann Achidi Ndofor (2004), *Assistant Professor of Management*, M.A., University of Wisconsin-Madison; M.B.A., University of Maryland; Ph.D., University of Wisconsin at Milwaukee

Faith R. Neale (2004), *Assistant Professor of Finance and Business Law*, B.S., University of Florida; M.S.A., Georgia Southwestern State University; Ph.D., Florida State University

James F. Nebus (2005), *Assistant Professor of Management,* B.A., B.S., Rutgers University; M.B.A., Ph.D., University of South Carolina

Jane Bryant Neese (1994), *Associate Dean for Academic Affairs, College of Health and Human Services, and Associate Professor of School of Nursing,* B.S.N., University of South Carolina; M.S., University of Maryland at Baltimore; Ph.D., University of Virginia

Delia Louise Neil (1987), *Associate Professor of Dance*, B.A., Butler University M.F.A., The University of North Carolina at Greensboro

John Arthur Nelson (1976), *Associate Professor of Architecture*, B.Arch., M.Arch., Kent State University

Redeena Newlon (2001), *Academic Advisor in Business,* B.A. Berea College

Anne Mabe Newman (1981), *Associate Professor of School of Nursing and Adjunct Associate Professor of Women's Studies*, B.S.N., University of North Carolina at Charlotte; M.S.N., University of North Carolina at Chapel Hill; D.S.N., University of Alabama at Birmingham

Kok-Mun Ng (2002), *Assistant Professor of Counseling,* B.S., University of Malaya; M.A., Malaysia Bible Seminary; M.A., Dallas Theological Seminary; M.Ed., University of North Texas; Ph.D., Texas A&M University

Thomas Nicholas II (2006), *Faculty Associate in Engineering Technology*, A.S., Fairmont State College; B.S., Fairmont State College; B.S., M.S., West Virginia University

William Dee Nichols (2005), *Associate Professor of Reading and Elementary Education,* B.S., M.A., Appalachian State University; Ph.D., Texas A & M University

Lisa T. Nickel (2004), *Assistant Professor and Librarian*, B.A., Rutgers University; M.A., University of South Florida

Kathleen Mary Nicolaides (2004), *Lecturer in Criminal Justice*, B.A., Duke University, J.D., Emory University

Bonnie Noble (1999), *Associate Professor of Art,* B.A., Northwestern University; M.A., University of Pennsylvania; Ph.D., Northwestern University

Marie-Thérèse Noiset (1986), *Professor of French,* B.A., Institut du Parnasse; M.A., Trinity College; Ph.D., University of Connecticut

Maciej A. Noras (2007), *Assistant Professor of Engineering Technology,* M.Sc., Wroclaw University of Technology; Ph.D., Southern Illinois University

Bennie Harold Nunnally, Jr. (1979), *Professor of Finance,* B.A., Virginia Union University; M.B.A., Atlanta University; D.B.A., University of Virginia

Christopher P. O'Brien (2006), *Assistant Professor of Special Education and Child Development,* B.A., M.A., Ph.D., University of Central Florida

Sherine O. Obare (2007), *Assistant Professor of Chemistry,* B.S., West Virginia State University; Ph.D., University of South Carolina - Columbia

Dennis E. Ogburn (2007), *Assistant Professor of Anthropology,* B.A., Rice University; M.A., University of California, Santa Barbara; Ph.D., University of California, Santa Barbara

Craig Alan Ogle (1984), *Professor of Chemistry,* B.S., Otterbein College; Ph.D., University of Arizona

Vincent Oloruntobi Ogunro (2001), *Associate Professor of Civil and Environmental Engineering,* B.S., University of Ife, Nigeria; M.S., University of Lagos, Nigeria; Ph.D., Institut National des Sciences Appliquees, France

Hae-Soo Oh (1984), *Professor of Mathematics,* B.S., M.S., Kyungpook National University, South Korea; Ph.D., University of Michigan

Tanure Ojaide (1990), *Professor of African-American and African Studies,* B.A., University of Ibadan, Nigeria; M.A., Ph.D., Syracuse University

James David Oliver (1974), *Bonnie E. Cone Distinguished Professor of Teaching, and Professor of Biology,* B.S., University of Arizona; Ph.D., Georgetown University

Carlos Orozco (2001), *Associate Professor of Engineering Technology,* B.S., Universidad Nacional de Colombia; M.S., Ph.D., Carnegie Mellon University

Steven Ott (1999), *John Crosland, Sr., Endowed Chair in Real Estate and Development, and Professor of Finance and Business Law,* B.B.A., University of Wisconsin - Whitewater; M.S., Ph.D., University of Wisconsin - Madison

Gordon Otto (2000), *Lecturer in Business Information Systems and Operations Management,* B.S., University of Texas at Austin; B.S., M.S., University of Michigan; M.S., Ph.D., North Carolina State University

Ertunga Ozelkan (2004), *Assistant Professor of Engineering Management;* B.A., Bogazici University; M.S., Ph.D., University of Arizona

Julie L. Padilla (2005), *Lecturer in School of Nursing,* B.S.N., Regents College; M.S.N., University of Phoenix

Sungjune Park (2001), *Assistant Professor of Business Information Systems and Operations Management,* B.S., M.S., Korea Advanced Institute of Science and Technology; Ph.D., State University of New York at Buffalo

Aimee Parkison (2004), *Assistant Professor of English,* B.A., Oklahoma State University, M.F.A., Cornell University

Matthew W. Parrow (2006), *Assistant Professor of Biology,* B.S., University of North Carolina at Chapel Hill; Ph.D., North Carolina State University

Kevin F. Parsons (2003), *Academic Advisor in Arts and Sciences,* B.S., M.Ed., Ohio University

Jeffrey Passe (1986), *Professor of Reading and Elementary Education,* B.A., State University of New York at Albany; M.Ed., Ph.D., University of Florida

Steven Robert Patterson (1993), *United Dominion Industries Distinguished Professor of Precision Engineering,* B.S., California Institute of Technology; M.S., Ph.D., University of California-Davis

Jamie J. Payton (2006), *Assistant Professor of Computer Science,* B.S., University of Tulsa; M.S., D.Sc., Washington University

Malin Pereira (1992), *Professor of English,* B.A., M.A., Ph.D., University of Wisconsin-Madison

Theresa R. Perez (1998), *Professor of Middle, Secondary, and K-12 Education,* B.A., M.A., California State University- Fresno; Ph.D., Stanford University

Tisha R. Perkins (2007), *Lecturer in College of Education,* B.A., M.A., University of North Carolina at Charlotte

Heather R. Perry (2005), *Assistant Professor of History,* B.A., Vanderbilt University; M.A., Ph.D., Indiana University

Amy H. Peterman (2005), *Associate Professor of Psychology,* B.S., Carnegie Mellon University; M.S., Ph.D., University of Pittsburgh

Susan Elizabeth Peters (1979), *Associate Professor of Biology,* B.S., M.S., Northern Arizona University; Ph.D., University of California-Davis

Srdjan Petrovic (2005), *Visiting Associate Professor of Mathematics and Statistics,* B.A., M.S., University of Belgrade, Serbia; Ph.D., University of Michigan

Teresa M. Petty (2005), *Assistant Professor of Middle, Secondary, and K-12 Education,* B.S., M.Ed.,

University of North Carolina at Greensboro; Ed.D., University of North Carolina at Chapel Hill

Nancy Pfingstag (1981), *Lecturer, English Language Training Institute*, B.A., State University of New York at Binghamton; M.A., University of North Carolina at Charlotte

James A. Piazza (2004), *Assistant Professor of Political Science*, B.A., Loyola University Chicago; M.A., University of Michigan; Ph.D., New York University

John Alfred Piel (1988), *Associate Professor of Reading and Elementary Education,* B.A., M.A., University of Northern Colorado; Ph.D., Florida State University

Paola Pilonieta (2007), *Assistant Professor of Reading and Elementary Education,* B.A., M.S., Ph.D., University of Miami

Marcelo de Pinheiro (2005), *Assistant Professor of Finance and Business Law,* B.A., M.A., Pontifical Catholic University of Rio de Janeiro, Brazil; Ph.D., Princeton University

Mark C. Pizzato (1997), *Professor of Theatre*, B.A., University of Notre Dame; M.F.A., The Catholic University of America; Ph.D., University of Wisconsin - Milwaukee

Donald Anthony Plath (1987), *Associate Professor of Finance*, B A., M.B.A., D.B.A., Kent State University

Jordan C. Poler (1995), *Associate Professor of Chemistry,* B.S., State University of New York at Brockport; Ph.D., University of North Carolina at Chapel Hill

Andrew B. Polly (2006), *Assistant Professor of Reading and Elementary Education,* B.S., College of William & Mary; M.S., Old Dominion University; Ph.D., University of Georgia

Sharon G. Portwood (2005), *Director, Institute for Social Capital, and Professor of Public Health Sciences,* B.S., University of Texas at Austin; M.A., University of Virginia; J.D., University of Texas at Austin; Ph.D., University of Virginia

Phyllis B. Post (1989), *Professor of Counseling,* A.B., University of North Carolina at Chapel Hill; M.Ed., University of North Carolina at Charlotte; Ph.D., University of Wisconsin

Judith Louise Presler (1970), *Associate Professor of Philosophy*, A.B., Baldwin-Wallace College; Ph.D., University of Oklahoma

Barbara Presnell (2003), *Lecturer in English,* B.A., M.F.A., University of North Carolina at Greensboro; M.A., University of Kentucky

Charles E. Price (1997), *Director of Research Computing*, B.A., Northwestern University; M.S., Ph.D., Indiana University

Jeffrey Wallace Price (1992), *Associate Professor of Music*, B.M., M.M., University of North Carolina at Greensboro; D.M., Florida State University

Ronald Lee Priebe (1970), *Associate Professor of Mechanical Engineering Technology*, B.S.M.E., Valparaiso University; M.S.M.E., University of Illinois

Linda Rough Probst (1988), *Lecturer in Kinesiology*, B.S., University of Vermont; M.A.T., University of North Carolina at Chapel Hill

David K. Pugalee (1997), *Associate Professor of Middle, Secondary, and K-12 Education*, B.S., Lee College; M.Ed., University of Southern Mississippi; M.S., North Carolina Central University; Ph.D., University of North Carolina at Chapel Hill

S. Douglas Pugh (2001), *Associate Professor of Management,* B.A., College of William and Mary; Ph.D., Tulane University

Anton Pujol (2004), *Assistant Professor of Spanish*, M.B.A., The University of Chicago; M.A., University of South Carolina at Columbia; Ph.D., The University of Kansas

Srinivas S. Pulugurtha (2005), *Assistant Professor of Civil and Environmental Engineering,* B.S., Nagarjuna University, India; M.S., Indian University of Technology; Ph.D., University of Nevada

Lan Hue Quach (2004), *Assistant Professor of Middle, Secondary, and K-12 Education*, B.S., M.A. Virginia Polytechnic Institute and State University; Ph.D., The University of North Carolina at Chapel Hill

James Allen Queen (1992), *Professor of Education,* B.S.Ed., M.A.Ed., Western Carolina University; Ed.D., University of Virginia

Joseph Edward Quinn (1971), *Professor of Mathematics*, B.S., University of Dayton; Ph.D., Michigan State University

Daniel Rabinovich (1996), *Professor of Chemistry,* B.S., Catholic University, Peru; M.A., M.Phil., Ph.D., Columbia University

Elizabeth F. Racine (2006), *Assistant Professor of Public Health Sciences,* B.A., Boston University; M.S., California State University; M.P.H., Johns Hopkins University; Dr.P.H., Johns Hopkins University

Stanislav Radchenko (2002), *Assistant Professor of Economics,* B.A., Donetsk State Academy of Management, Russia; M.A., Ph.D., Rutgers University

Anita Raja (2003), *Assistant Professor of Software and Information Systems*, M.S., Ph.D., University of Massachusetts at Amherst

Jayaraman Raja (1989), *Chair, Department of Mechanical Engineering and Engineering Science, and Professor of Mechanical Engineering*, B.E., M.Sc.,

University of Madras, India; Ph.D., Indian Institute of Technology

Mohammad Yasin Akhtar Raja (1990), *Professor of Physics and Optical Science*, B.A., Punjab University, Pakistan; M.S., M.A., University of Islamabad, Pakistan; Ph.D., University of New Mexico

Sarah J. Ramsey (2005), *Assistant Professor of Reading and Elementary Education,* B.S., University of Tulsa; M.A., Washington University – St. Louis; Ph.D., Oklahoma State University

Clarrice A. Rapisarda (2005), *Assistant Professor of Counseling*, B.S., M.A., John Carroll University; Ph.D., Kent State University

Jeff Raquet (2001), *Senior Lecturer in Mechanical Engineering and Engineering Science,* B.S., Rutgers University; M.S., University of Memphis; Ph.D., University of North Carolina at Charlotte

Zbigniew Weislaw Ras (1981), *Professor of Computer Science*, M.A., Ph.D., Warsaw University

J. Dennis Rash (2001), *Executive in Residence and Visiting Professor of Geography,* B.A., University of North Carolina at Chapel Hill; J.D., University of Virginia

Lisa Slattery Rashotte, (1998), *Associate Professor of Sociology,* B.A., Florida State University; M.A., Ph.D., University of Arizona

Lisa M. Rasmussen (2006), *Assistant Professor of Philosophy,* B.S., University of California, Santa Cruz; M.A., Ph.D., Rice University

Gary Raymond Rassel (1982), *Associate Professor of Political Science and Adjunct Associate Professor of Gerontology*, B.S., South Dakota State University; M.A., University of South Dakota; M.A., Ph.D., Michigan State University

Alan Rauch (2002), *Associate Professor of English,* B.S., McGill University; M.S., Southern Illinois University; M.A., Ph.D., Rutgers University

Arun Ravindran (2003), *Assistant Professor of Electrical and Computer Engineering*, B.S., M.S., Birla Institute of Technology and Science, India; M.S., Ph.D., Ohio State University

Reginald D. Raymer (2005), *Lecturer of Philosophy,* B.S., Lenoir-Rhyne College; B.A., M.A., University of North Carolina at Charlotte

Lynn C. Raymond (2006), *Lecturer in English,* B.A., M.A., University of North Carolina at Charlotte

Susan K. Rebich (1999), *Lecturer in Education,* B.S., Youngstown State University; M.Ed., University of North Carolina at Charlotte

Charlie Lucian Reeve (2004), *Associate Professor of Psychology*, B.A., University of Minnesota-Twin Cities; M.A., Ph.D., Bowling Green State University

John C. Reeves (1996), *Blumenthal Professor of Judaic Studies and Professor of Religious Studies,* B.A., University of North Carolina at Chapel Hill; M.Div., Southeastern Baptist Theological Seminary; M.Phil., Ph.D., Hebrew Union College-Jewish Institute of Religion

Robert Charles Reimer (1971), *Interim Chair, Department of Languages and Culture Studies, and Professor of German*, B.A., University of Wisconsin; M.A., Ph.D., University of Kansas

Noel Darien Reiss (1995), *Lecturer in Dance,* B.A., University of California-Los Angeles; M.F.A., Ohio State University

Harold Braun Reiter (1972), *Professor of Mathematics*, B.S., Louisiana State University; M.S., Ph.D., Clemson University

Thomas Leonard Reynolds (1982), *Associate Provost for Graduate Programs, Dean of the Graduate School, and Professor of Biology*, B.A., M.A., California State University; Ph.D., Ohio State University

Alina Reznikova (2003), *Lecturer in Mathematics,* B.A., M.A., Ph.D., Moscow State University

J. Lyn Rhoden (1995), *Associate Professor of Special Education and Child Development,* B.A., Stetson University; M.H.D.L., University of North Carolina at Charlotte; Ph.D., University of North Carolina at Greensboro

William Ribarsky (2004), *Bank of America Endowed Chair in Information Technology and Professor of Computer Science*, B.S., M.S., Ph.D., University of Cincinnati

Christine A. Richardson (2006), *Associate Professor of Biology,* A.B., Princeton University; M.A., M.Ph., Ph.D., Columbia University

Heather A. Richter (2005), *Assistant Professor of Software and Information Systems,* B.S., Michigan State University; Ph.D., Georgia Institute of Technology

Robert J. Rickelman (1991), *Chair, Department of Reading and Elementary Education, and Professor of Reading and Elementary Education,* B.A., M.Ed., Ohio University; Ph.D., University of Georgia

Janice E. Rieman (2007), *Lecturer in English,* B.A., M.A., University of North Carolina at Charlotte; Ph.D., Georgia State University

Amy Ringwood (2004), *Assistant Professor of Biology*, B.A., Wake Forest University, Ph.D., University of Hawaii at Manoa

John Marcus Risley (1988), *Professor of Chemistry*, B.S., Ball State University; Ph.D., Purdue University

Stephanie S. Robbins (1981), *Professor of Business Information Systems and Operations Management*, A.A., Lasell Junior College; B.A., Emerson College; M.Ed., Memphis State University; Ph.D., University of Alabama; Ph.D., Louisiana State University

Julia M. Robinson-Harmon (2005), *Assistant Professor of Religious Studies,* B.A., Alma College; M.Div., Princeton Theological Seminary; Ph.D., Michigan State University

Joanne M. Maguire Robinson (1996), *Associate Professor of Religious Studies,* B.A., Connecticut College; M.T.S., Harvard Divinity School; Ph.D., The University of Chicago

Tracy Rock (2000), *Associate Professor of Reading and Elementary Education,* B.A., University of North Carolina at Charlotte; M.A., Ph.D., University of North Carolina at Greensboro

Steven Rogelberg (2003), *Professor of Psychology,* B.S., Tufts University; M.A., Ph.D., University of Connecticut

Thomas D. Rogers (2005), *Assistant Professor of Africana Studies,* B.A., Williams College; M.A., Ph.D., Duke University

Brenda Romanoff (2002), *Assistant Professor of Special Education and Child Development,* B.S., Eastern Kentucky University; M.Ed., University of Cincinnati; Ph.D., University of Arizona

Franz Rothe (1989), *Associate Professor of Mathematics*, B.A., Universitat Fridericiana, Germany; M.A., Eidgenossiche Technishe Hochschule, Switzerland; Ph.D., Universitat zu Tubingen, Germany

Kristin Rothrock (2003), *Lecturer of Art*, B.S., Skidmore College; M.F.A., University of Wisconsin-Madison

Constance G. Rothwell (1989), *Director of University Honors Program and Lecturer in English*, B.A., M.A., University of Michigan

Robert I. Roundtree (2006), *Assistant Professor in Marketing,* B.B.A., Pace University; M.B.A., University of Pennsylvania; Ph.D., University of Illinois at Urbana-Champaign

David Calvin Royster (1982), *Director, Center for Mathematics, Science, and Technology Education; and Associate Professor of Mathematics*, B.A., University of the South; Ph.D., Louisiana State University

Beth Rubin (2002), *Professor of Management and Adjunct Professor of Sociology,* B.A., State University of New York at New Paltz; M.A., Ph.D., Indiana University at Bloomington

Blair A. Rudes (1999), *Associate Professor of English*, B.A., M.A., Ph.D., State University of New York at Buffalo

Carole Elaine Runnion (1989), *Senior Associate University Librarian and Associate Professor*, B.A., Catawba College; M.S.L.S., University of North Carolina at Chapel Hill

Judson W. Russell (2005), *Assistant Professor of Finance and Business Law,* B.S.B.A., M.B.A., The University of Southern Mississippi; M.A., Ph.D., University of Alabama

Benjamin Russo (1984), *Associate Professor of Economics*, B.A., State University of New York at Stony Brook; M.A., Ph.D., University of Iowa

Philip L. Rutledge (1999), *Lecturer in Sociology,* B.A., M.A., University of North Carolina at Greensboro

Deborah Elaine Ryan (1985), *Associate Professor of Architecture and Adjunct Assistant Professor of Women's Studies*, B.L.Arch., North Carolina State University; M.L.Arch., Harvard University

Steven O. Sabol (1998), *Associate Professor of History*, B.A., Elon College; M.A., Old Dominion University; Ph.D., Georgia State University

Adalira Saenz-Ludlow (1995), *Associate Professor of Mathematics,* B.S., Universidad Pedagogica Nacional; M.S., State University of New York at Fredonia; Ed.D., University of Georgia

Oleg Safronov (2005), *Assistant Professor of Mathematics and Statistics,* M.Sc., St. Petersburg State University; Ph.D., Royal Institute of Technology

Linda Samuels (1998), *Assistant Professor of Architecture*, B.D., University of Florida; M.Arch., Princeton University

Robert Morrison Sandarg (1984), *Associate Professor of French*, B.A., M.A., Ph.D., University of North Carolina at Chapel Hill

Bridgette Tapley Sanders (1989), *Associate Professor and Librarian*, B.S., South Carolina State College; M.S.L.I.S., Atlanta University

Lonnie Delores Sanders (1974), *Assistant Professor of School of Nursing*, B.S.N., Winston-Salem State University; M.Ed., University of North Carolina at Charlotte; M.N., Ph.D., University of South Carolina

Robert R. Sass (2006), *Associate Professor of Electrical and Computer Engineering,* B.S., University of Toledo; M.S., Ph.D. Michigan State University

Eric John Sauda (1977), *Professor of Architecture*, A.B., Princeton University; M.Arch., University of California-Los Angeles

Dylan Savage (2002), *Associate Professor of Music,* B.M., Oberlin College; M.M., D.M., Indiana University at Bloomington

Cem Ali Saydam (1986), *Professor of Business Information Systems and Operations Management*, B.S., Bogazici University; Ph.D., Clemson University

Teresa L. Scheid (1990), *Professor of Sociology*, B.A., Heidelberg College; M.S., Texas A&M University; Ph.D., North Carolina State University

Karen B. Schmaling (2004), *Dean, College of Health and Human Services, and Professor of Public Health Sciences*, B.A., University of Oregon; M.S., Ph.D., University of Washington

Thomas Schmedake (2002), *Assistant Professor of Chemistry,* B.A., Knox College; Ph.D., University of Wisconsin-Madison

Stanley Scott Schneider (1985), *Professor of Biology*, B.S., M.S., Southwest Texas University; Ph.D., University of California-Davis

Jeremy M. Schott (2005), *Assistant Professor of Religious Studies,* B.A., University of Rochester; M.A., Ph.D., Duke University

Richard G. Schroeder (1991), *Professor of Accounting*, B.Ed., Chicago Teachers College; M.B.A., Northwestern University; D.B.A., Arizona State University

Laura Schrum (2001), *Associate Professor of Biology,* B.S., Ph.D., North Carolina State University

Marilyn Schuster (1990), *Associate Professor and Librarian*, B.A., University of North Carolina at Charlotte; M.L.S., University of South Carolina

Peter Martin Schwarz (1978), *Professor of Economics*, B.S., City College of New York; M.A., Ph.D., Ohio State University

Jamie Cameron Scotland (2000), *Professor of Aerospace Studies*, B.S., Norwich University; M.B.A., University of North Dakota

Anthony Scott (2002), *Assistant Professor of English,* B.A., University of North Carolina at Charlotte; M.A., Appalachian State University; Ph.D., University of Louisville

Clifton W. Scott (2005), *Assistant Professor of Communication Studies*, B.S., Bradley University; M.A., Northern Illinois University; Ph.D., Arizona State University

Rosalba E. Scott (2005), *Lecturer in Spanish,* B.A., Universidad Nacional de Colombia; M.A., University of Southern Mississippi

Sara H. Scott (2003), *Lecturer in Computer Science*, B.A., Agnes Scott College; M.B.A., Georgia State University

Calvin W. Sealey (1996), *Chair, Department of Finance and Business Law and The Torrence E. Hemby, Sr. Distinguished Professor in Banking,* B.A., University of North Carolina at Asheville; M.A., Ph.D., University of Georgia

Susan M. Sell (2006), *Associate Dean of the Graduate School and Associate Professor of Biology,* A.B., University of California-Berkeley; Ph.D., University of Utah

Martin A. Settle (1992), *Lecturer in English*, B.A., Quincy College; M.A., Sangamon State University; M.A., University of North Carolina at Charlotte

Suzanne K. Sevin (2001), *Clinical Professor of Accounting,* B.S., Southeastern Louisiana University; M.B.A., University of New Orleans; Ph.D., University of Georgia

Ellen Marie Miller Sewell (1982), *Assistant Professor of Economics*, B.S., Boston University; Ph.D., University of Florida

Thomas Sgritta (2001), *Lecturer in Management,* B.S., Purdue University; M.B.A., University of Michigan

Wafaa Shaban (2003), *Lecturer in Mathematics,* B.A., Lebanese University; M.A., Ph.D., University of North Carolina at Charlotte

Douglas Stuart Shafer (1978), *Professor of Mathematics*, B.S., Carson-Newman College; M.S., Ph.D., University of North Carolina at Chapel Hill

Joseph D. Shannon (2003), *Production Manager, Department of Dance and Theatre, and Lecturer in Dance and Theatre*, B.F.A., M.F.A., California Institute of the Arts

Linda R. Shanock (2007), *Assistant Professor of Psychology,* B.S., Virginia Polytechnic Institute and State University; M.A., Kean University; Ph.D., University of Delaware

Alan T. Shao (1990), *Associate Dean for International Business Programs, and Professor of Marketing*, B.B.A., M.B.A., Old Dominion University; Ph.D., University of Alabama

Dmitri A. Shapiro (2006), *Assistant Professor of Economics,* B.S., M.S., Moscow State University; M.A., New Economic School; M.Phl., Ph.D., Yale University

Deborah Sharer (2001), *Associate Professor of Engineering Technology,* B.S., M.S., Ph.D., University of North Carolina at Charlotte

Larry W. Sharpe (2006), *Lecturer in Mechanical Engineering and Engineering Science,* B.S., University of North Carolina at Charlotte; M.S., North Carolina State University

Daniel L. Shealy (1988), *Professor of English*, B.A., Newberry College; M.A., Ph.D., University of South Carolina

Jeffrey K. Shears (2007), *Associate Professor in Social Work,* B.S.W., M.Ed., North Carolina Agricultural & Technical State University; Ph.D., University of Denver

Charlene Sheets (2005), *Lecturer of Mathematics and Statistics,* B.S., East Carolina University; M.A., Ph.D., University of Maryland-University College

Dena Shenk (1991), *Director and Graduate Coordinator, Gerontology Program, and Professor of Anthropology*, B.A., State University of New York at Stony Brook; M.A., Ph.D., University of Massachusetts

E. Lamar Sheppard (2003), *Faculty Associate in Electrical and Computer Engineering*, B.S., Clemson University; M.S., North Carolina State University; Ph.D., Clemson University

Barry G. Sherlock (1997), *Professor of Engineering Technology*, B.S.E.E., M.S.E.E., University of Cape Town; Ph.D., Imperial College, University of London

Jing Shi (2006), *Visiting Assistant Professor in Mathematics and Statistics,* B.Sc., Tsinghua University; Ph.D., Brown University

Min Shin (2001), *Assistant Professor of Computer Science,* B.A., M.S., Ph.D., University of South Florida

Terry R. Shirley (2006), *Lecturer in Geography and Earth Sciences,* B.S., M.S., Pennsylvania State University

Marcia Shobe (2001), *Assistant Professor of Social Work,* B.A., State University of New York at Plattsburgh; M.S.W., University of Hawaii at Manoa; Ph.D., University of Kansas

Patti J. Shoe (2005), *Lecturer in School of Nursing,* B.S.N., University of North Carolina at Charlotte; M.S.N., University of North Carolina at Greensboro

Shinichi Shoji (2006), *Lecturer in Languages and Culture Studies,* B.A., Mie University, Japan; M.A., Winthrop University

Veronica O. Sichivitsa (2005), *Assistant Professor of Music,* B.M., Lviv State S. Ludkevich College of Music; M.M., Lviv State M. Lysenko Music Conservatory; Ph.D., Auburn University

William David Siegfried, Jr. (1976), *Director of Uptown Center, and Associate Professor of Psychology*, B.A., Trinity College; M.A., Long Island University; Ph.D., Ohio State University

James M. Simpson (2006), *Lecturer in Art,* B.A., Western Illinois University; M.S., M.F.A., Illinois State University

Afife Yesim Sireli (2003), *Assistant Professor of Engineering Management*, B.S., M.S., Istanbul Technical University, Turkey; Ph.D. Old Dominion University

Wade Napoleon Sisk (1993), *Associate Professor of Chemistry,* B.S., University of Iowa; Ph.D., University of California-Berkeley

Frank R. Skinner II (2005), *Lecturer in Mechanical Engineering and Engineering Science,* B.M.E., Georgia Institute of Technology; M.S.M.E., University of Massachusetts

Martha Sloss (2002), *Academic Counselor in Health and Human Services,* A.B., Queens College; M.A., University of North Carolina at Charlotte

John Smail (1988), *Associate Provost for General Education, and Professor of History*, B.A., University of Wisconsin at Madison; M.A., Ph.D., Stanford University

Ronald Smelser (2003), *Associate Dean of William States Lee College of Engineering, and Professor of Mechanical Engineering and Engineering Science,* B.S.M.E., University of Cincinnati; M.S., Massachusetts Institute of Technology; Ph.D., Carnegie Mellon University

Debra Smith (1998), *Assistant Professor of Africana Studies*, B.A., University of North Carolina at Chapel Hill; M.A., University of North Carolina at Charlotte; Ph.D., University of North Carolina at Greensboro

Heather Anne Smith (1999), *Associate Professor of Geography,* B.A., University of North Carolina at Chapel Hill; M.A., Queens University, Ontario; Ph.D., University of British Columbia

JaneDiane Smith (1999), *Associate Professor of Special Education and Child Development*, B.S., Pennsylvania State University; M.Ed., University of Pittsburgh; Ph.D., Vanderbilt University

John David Smith (2004), *Charles H. Stone Distinguished Professor of American History*, A.B., Baldwin-Wallace College; A.M., Ph.D., University of Kentucky

Marilyn Greene Smith (1977), *Lecturer in School of Nursing*, A.A., Gardner-Webb College; B.S.N., University of North Carolina at Charlotte; M.S.N., University of North Carolina at Chapel Hill; F.N.P., University of South Carolina

Mary M. Smith (2005), *Lecturer in School of Nursing,* B.S.N., St. Joseph's College; M.S.N., Queens College

Paul Douglas Smith (1980), *Lecturer in Geography*, B.S., Michigan State University

Robert Smith (2002), *Assistant Professor of Africana Studies,* B.A., Purdue University; M.A., Central Michigan University; Ph.D., Bowling Green State University

Scott Smith (1997), *Professor of Mechanical Engineering and Engineering Science*, B.S.M.E., Tennessee Technological University; M.S., Ph.D., University of Florida

Stuart Thomas Smith (1994), *Professor of Mechanical Engineering and Engineering Science,* B.S., Dunstable College; Ph.D., University of Warwick

Sylvia A. Smith (2004), *Lecturer in German*, J.D., University of Freiburg

Dorothy Smith-Ruiz (1992), *Associate Professor of Africana Studies and Adjunct Associate Professor of Sociology*, B.A., Fort Valley State College; M.A., Ph.D., Michigan State University at East Lansing

Oleg V. Smolski (2007), *Associate Research Professor,* B.Sc., St. Petersburg Electrotechnical University; M.Sc., Ph.D., Ioffe Physico-Technical Institute

Gregory Snyder (1994), *Associate Professor of Architecture*, B.S., University of Texas at Arlington; M.Arch., Rice University

James J. Snyder (2005), *Research Professor of Physics and Optical Science*, B.S., Ph.D., State University of New York at Stony Brook

Pamela Anderson Sofras (1976), *Professor of Dance*, B.F.A., The Juilliard School; M.Ed., Lehigh University

Inna Sokolova (2002), *Assistant Professor of Biology,* Cand. Sci., St. Petersburg State University; Ph.D., Russian Academy of Sciences

Meredith A. Somerville (2005), *Lecturer in Biology,* B.S., University of Massachusetts; M.S., University of California-Davis

Isaac M. Sonin (1991), *Professor of Mathematics*, M.S., Ph.D., Moscow State University

Eddy M. Souffrant (2004), *Associate Professor of Philosophy*, B.A., DePaul University; Ph.D., The City University of New York Graduate School and University Center

Valmi D. Sousa (2006), *Assistant Professor in School of Nursing,* B.S.N., Faculty of Nursing and Obstetrics of Guarulhos; C.N.S., M.S.N., Federal University of Sao Paulo, Brazil; Ph.D., Case Western Reserve University

Richard M. Souvenir (2006), *Assistant Professor of Computer Science,* B.S., M.S., D.Sc., Washington University

Cheryl Spainhour (2003), *Lecturer in Communication Studies,* B.A., University of Georgia; M.A., Wake Forest University

Sue Carole Spaulding (1993), *Lecturer in Psychology,* B.S., M.S., Purdue University

Frederick Howard Spooner (1981), *Professor of Special Education and Child Development*, B.S., M.S., Butler University; Ph.D., University of Florida

Melba Cathey Spooner (1987), *Chair, Department of Middle, Secondary, and K-12 Education, and Professor of Reading and Elementary Education*, A.A., Central Piedmont Community College; B.A., M.Ed., University of North Carolina at Charlotte; Ed.D., The University of North Carolina at Greensboro

Jo Ann Springs (1987), *Assistant Professor of Special Education and Child Development*, B.A., North Carolina Central University; M.H.D.L., University of North Carolina at Charlotte; Ph.D., University of North Carolina at Greensboro

Edward Byron St. Clair (1970), *Associate Professor of Religious Studies*, B.A., George Washington University; B.D., Southeastern Baptist Theological Seminary; Ph.D., Duke University

Courtney St. Onge (2006), *Lecturer in Communication Studies,* B.A., Auburn University; M.S., Columbia University

Kay Starnes (2001), *Senior Program Manager, Distance Education and Lecturer in Education,* B.A., M.A., University of North Carolina at Charlotte

Gregory Steven Starrett (1992), *Associate Professor of Anthropology,* B.A., Northwestern University; M.A., Ph.D. Stanford University

John A. Staunton (2003), *Assistant Professor of English*, B.A., University of Notre Dame; M.A., Ph.D., Fordham University

Nickolas Mark Stavrakas (1973), *Professor of Mathematics*, B.S., University of North Carolina at Charlotte; M.S., Ph.D., Clemson University

Elizabeth Stearns (2005), *Assistant Professor of Sociology,* B.A., Rice University; M.A., Ph.D., University of North Carolina at Chapel Hill

Todd Robert Steck (1991), *Associate Professor of Biology*, B.S., Allegheny College; M.S., Ph.D., University of Rochester

Jack M. Stein (2005), *Assistant Dean and Director of Engineering Computing,* B.S., M.S., University of Pittsburgh

Katherine Suzanne Stephenson (1986), *Associate Professor of French and Adjunct Associate Professor of Women's Studies*, B.A., Texas Christian University; M.A., Ph.D., University of North Carolina at Chapel Hill

Thomas H. Stevenson (1976), *Cullen Professor of Marketing*, B.S.B.A., M.B.A., Syracuse University; Ph.D., Case Western Reserve University

Lois Walker Stickell (2001), *Associate Professor and Librarian,* B.A., M.L.S., Indiana University

Carol Stivender (2003), *Lecturer in Economics,* B.A., Lenoir Rhyne College; M.S., University of North Carolina at Charlotte

Ashli Q. Stokes (2006), *Assistant Professor of Communication Studies,* B.A., Virginia Tech; M.A., Wake Forest University; Ph.D., University of Georgia

Edward Stokes (2002), *Associate Professor of Electrical and Computer Engineering,* B.S.E., M.S.E., University of North Carolina at Charlotte; Ph.D., Rensselaer Polytechnic Institute

Roy Strassberg (2001), *Chair, Department of Art, and Professor of Art,* B.A., State University of New York at Oswego; M.F.A., University of Michigan

Martha Ann Strawn (1971), *Professor of Art,* B.A., Florida State University; M.F.A., Ohio University

Jamie Strickland (2001), *Lecturer of Geography and Earth Sciences,* B.S., M.A., University of North Carolina at Charlotte; Ph.D., University of Georgia

Caryn Striplin (2000), *Lecturer in Chemistry,* B.S., California State University-Chico; Ph.D., Washington State University

James Studnicki (2006), *Irwin Belk Endowed Chair in Health Research and Professor of Public Health Sciences,* B.S., University of Pittsburgh; M.B.A., George Washington University; M.P.H., Ph.D., Johns Hopkins University

Anthony C. Stylianou (1990), *Professor of Business Information Systems and Operations Management,* B.A., M.B.A., Ph.D., Kent State University

Zhengchang Su (2006), *Assistant Professor of Bioinformatics,* B.S., Yunnan Agricultural University, China; M.S., Ph.D., Jilin University, China; M.S., University of Alabama at Birmingham

Chandrasekar Subramaniam (2003), *Assistant Professor of Business Information Systems and Operations Management,* B.E., Regional Engineering College of Trichy, India; Dipl., Indian Institute of Management; Ph.D., University of Illinois at Urbana-Champaign

Kalpathi Raman Subramanian (1993), *Associate Professor of Computer Science,* B.E., University of Madras, India; M.S., Ph.D., University of Texas at Austin

John Sugg, Jr. (2003), *Academic Counselor in Health and Human Services,* B.S., M.S., University of Kentucky

Alexey A. Sukhotin (2006), *Assistant Professor of Biology,* Diploma, Leningrad State University, Russia; Ph.D., Zoological Institute of Russian Academy of Sciences

Thomas J. Suleski (2003), *Associate Professor of Physics and Optical Science,* B.S., University of Toledo; M.S., Ph.D., Georgia Institute of Technology

Judith A. Sullivan (2004), *Assistant Professor of Music,* B.M., Michigan State University; M.M., Ph.D., University of Kentucky

Yanqing Sun (1994), *Professor of Statistics,* B.S., Wuhan University of Technology, China; M.S., Huazhong University of Science and Technology, China; M.S., Ph.D., Florida State University

Caroline Swartz (2006), *Clinical Professor of Economics,* B.S., State University of New York at Fredonia; M.A., Ph.D., Duke University

Linda E. Swayne (1981), *Chair, Department of Marketing, and Professor of Marketing,* B.B.A., M.B.A., Stetson University; Ph.D., North Texas State University

David Swindell (2003), *Associate Professor of Political Science,* B.A., University of Texas at Arlington; Ph.D., Indiana University at Bloomington

Michael Thomas Swisher (1988), *Associate Professor of Architecture,* A.B., Washington University; M.F.A., Massachusetts College of Art

John J. Szmer (2006), *Visiting Assistant Professor of Political Science,* B.A., J.D., University of Georgia; M.S., University of Georgia; Ph.D., University of South Carolina at Columbia

James Daniel Tabor (1989), *Chair, Department of Religious Studies, and Professor of Religious Studies,* B.A., Abilene Christian University; M.A., Pepperdine University; Ph.D., University of Chicago

David Bruce Taylor (2004), *Assistant Professor of Reading and Elementary Education,* B.A., University of Texas at Austin; M.Ed., University of Houston; Ph.D., University of Iowa

John R. Taylor (2006), *Lecturer in Mathematics and Statistics,* B.S., M.S., North Carolina State University; Ph.D., University of North Carolina at Charlotte

Richard Glenn Tedeschi (1976), *Professor of Psychology,* B.A., Syracuse University; Ph.D., Ohio University

S. Gary Teng (2000), *Professor of Mechanical Engineering and Engineering Science,* B.E., Chung Yuan University, China; M.S., University of Kentucky; Ph.D., Auburn University

William Scott Terry (1976), *Professor of Psychology,* B.A., Fairfield University; M.S., Ph.D., Yale University

David Wesley Test (1983), *Professor of Special Education and Child Development,* B.A., Eisenhower College; M.A., Ph.D., Ohio State University

Chantal M. Tetreault (2005), *Assistant Professor of Anthropology,* B.A., Vassar College; M.A., Ph.D., University of Texas at Austin

David J. Thaddeus (1999), *Associate Professor of Architecture,* B.E., The American University of Beirut, Lebanon; M.Arch., University of Houston

Barbara A. Thiede (2006), *Lecturer in Religious Studies,* B.A., University of Illinois at Urbana-

Champaign; M.A., Ph.D., University of Missouri - Columbia

Ralf Thiede (1990), *Associate Professor of English*, M.A., Ph.D., University of Missouri

Jean-Claude F. Thill (2006), *Knight Distinguished Professor of Public Policy amd Professor of Georgraphy and Earth Sciences,* B.S., M.S., Ph.D., Universite Catholique de Louvain

Henrietta Thomas (1995), *Director, University Advising Center, and Lecturer in Arts and Sciences,* B.A., Davidson College, M.Ed., University of North Carolina at Charlotte

Heather A. Thompson (1997), *Associate Professor of History,* B.A., M.A., University of Michigan; Ph.D., Princeton University

Michael E. Thompson (2005), *Assistant Professor of Public Health Sciences*, B.A., The John Hopkins University; M.S., The University of Maryland Baltimore County; Dr.P.H., The John Hopkins University

Peter J. Thorsheim (2000), *Associate Professor of History,* B.A., Carleton College; M.A., Ph.D., University of Wisconsin-Madison

Linda A. Thurman (2004), *Faculty Associate for Professional Student Development, William States Lee College of Engineering*, M.A., Roosevelt University

Barbara Tierney (1998), *Associate Professor and Librarian*, B.A., Northwestern University; M.L.S., University of Michigan

Winston Reed Tite (1980), *Associate Professor of Art*, B.S., Weber State College; M.F.A., Arizona State University

Richard Henry Toenjes (1973), *Associate Professor of Philosophy*, B.A., M.A., St. Louis University; Ph.D., University of Southern California

Patricia Ann Tolley (1995), *Faculty Associate and Assistant Dean for Student Development, College of Engineering*, B.S.M.E., M.S.M.E., University of North Carolina at Charlotte

William J. Tolone (1996), *Professor of Software and Information Systems,* B.S., Millikin University; Ph.D., University of Illinois at Urbana-Champaign

Rosemarie Tong (1999), *Mecklenburg County Medical Society Distinguished Professor of Health Care Ethics; Professor of Philosophy; and Director, Center for Professional and Applied Ethics*, B.A., Marygrove College; M.A., The Catholic University of America; Ph.D., Temple University

Aaron A. Toscano (2006), *Assistant Professor of English,* B.A., Virginia Tech; M.S., Towson University; Ph.D., University of Louisville

Cynthia L. Toth (1999), *Lecturer in School of Nursing,* B.S.N., Eastern Michigan University; M.S.N., Georgia State University

Julie Townsend (1999), *Lecturer in English,* B.A., M.A., University of North Carolina at Charlotte

Susan R. Trammell (1996), *Associate Professor of Physics and Optical Science,* B.S., University of North Carolina at Chapel Hill; M.A., Ph.D., University of Texas at Austin

Farid Michel Tranjan (1985), *Professor of Electrical Engineering*, B.S., Centenary College of Louisiana; M.S., Ph.D., University of Kentucky

Rosemary L. Traore (2006), *Assistant Professor of Middle, Secondary, and K-12 Education,* B.A., Temple University; M.Ed., University of Arizona; Ph.D., Temple University

Lucille L. Travis (2006), *Associate Dean, Director, and Professor, School of Nursing,* B.S.N., M.S., Ph.D., Ohio State University

Jayne Tristan (2003), *Lecturer in Philosophy,* B.S., M.A., University of Oregon; Ph.D., Southern Illinois University-Carbondale

Louis Alfred Trosch (1969), *Professor of Business Law*, B.A., Bethany College; M.A., George Washington University; J.D., West Virginia University

Jennifer Troyer (1999), *Associate Professor of Economics and Associate Professor of Public Health Sciences,* B.A., Memphis State University; M.S., Ph.D., Florida State University

Jason A. Tselentis (2005), *Lecturer of Art,* B.F.A., University of Nebraska-Lincoln, M.F.A., University of Washington

Hui-Kuan Tseng (1988), *Associate Professor of Economics*, B.A., National Taiwan University, M.A., Southern Illinois University; Ph.D., University of Illinois at Urbana-Champaign

Raphael Tsu (1988), *Distinguished Professor of Electrical Engineering*, B.S., University of Dayton; M.S., Ph.D., Ohio State University

Irvin Burchard Tucker III (1981), *Associate Professor of Economics*, B.S., North Carolina State University; M.A., Ph.D., University of South Carolina

Mary Tuma (1998), *Associate Professor of Art*, B.S., University of California-Davis; M.F.A., University of Arizona

Catalin C. Turc (2007), *Assistant Professor of Mathematics and Statistics,* B.S., M.S., Al.I.Cuza University; Ph.D. University of Minnesota

Michael G. Turner (2002), *Associate Professor of Criminal Justice,* B.S., Bowling Green State University; M.S., Ph.D., University of Cincinnati

Michael J. Turner (1998), *Associate Professor of Kinesiology and Adjunct Assistant Professor of Gerontology*, B.S., M.S., Miami University; Ph.D., University of Tennessee

Joan Carol Tweedy (1978), *Assistant Professor of Art and Adjunct Assistant Professor of Women's Studies*, B.F.A., Syracuse University ; M.F.A., Alfred University

Henry W. Tyree Jr. (1999), *Lecturer in English,* B.S., University of North Alabama; M.A., University of North Carolina at Charlotte

Robert K. Tyson (1999), *Associate Professor of Physics and Optical Science,* B.S., Pennsylvania State University; M.S., Ph.D., West Virginia University

Jozef Urbas (2007), *Associate Professor of Engineering Technology,* B.S., University of Ljubljana; M.S., University of Zagreb; Ph.D., University of Ljubljana

Boris Rufimovich Vainberg (1992), *Professor of Mathematics*, M.Sc., D.Sc., Moscow State University, Russia

Judith Elizabeth Van Noate (1986), *Associate Professor and Librarian*, B.F.A., M.F.A., Ohio University; M.L.S., University of North Carolina at Chapel Hill

Lori Beth Van Wallendael (1986), *Associate Chair, Department of Psychology, and Associate Professor of Psychology*, B.A., MacMurray College; M.A., Ph.D., Northwestern University

Christine Wallgren Vance (1974), *Associate Professor of French*, C.E.L.G., Universite de Paris et Lille; Licence-es-Lettres, Universite d' Alger-Aix-en-Provence; Licence-es-Lettres, Universite de Paris-Sorbonne; M.A., Ph.D., Vanderbilt University

James V. Vesce (2000), *Associate Professor of Theatre,* B.A., Loyola University New Orleans; M.T.S., Harvard University; M.F.A., University of Massachusetts

Lara E. Vetter (2005), *Assistant Professor of English,* B.A., M.A., Georgia State University; Ph.D., University of Maryland

Jean P. Vintinner (2006), *Lecturer in Reading and Elementary Education,* B.A., M.Ed., University of North Carolina at Charlotte

Lisa D. Wagnes (2006), *Lecturer in School of Nursing,* B.S., Pennsylvania State University; M.S.N., MGH Institute of Health Professions

Judith Ann Walker (1987), *Professor and Librarian,* B.A., Montclair State College; M.L.I.S., The Catholic University of America

Veronica Nmoma Walker (1991), *Associate Professor of Africana Studies*, B.A., M.S., American University; Ph.D., Howard University

Allie Wall (1981), *Lecturer, English Language Training Institute*, B.A., M.A., University of South Carolina; M.A., Georgetown University

Deborah M. Wall (2005), *Lecturer in Art,* B.F.A., University of North Carolina at Charlotte; M.A., Winthrop University

James I. Walsh (1997), *Associate Professor of Political Science*, B.A., Trinity College; Ph.D., American University

David Russell Ian Walters (1990), *Professor of Architecture*, B.Arch., M.Arch., University of Newcastle-upon-Tyne, United Kingdom

Chuang Wang (2004), *Assistant Professor of Educational Leadership*, M.A., Xi'an Jiaotong University, China; M.S., Ph.D., Ohio State University

Qingfang Wang (2005), *Assistant Professor of Geography and Earth Sciences,* B.S., Tianjin University of Finance and Economics; M.A., Central University of Finance and Economics; Ph.D., University of Georgia

Sheng-Guo Wang (1997), *Associate Professor of Engineering Technology*, B.S., M.S., University of Science and Technology of China; Ph.D., University of Houston

Yongge Wang (2002), *Assistant Professor of Software and Information Systems,* B.S., M.S., Nankai University, China; Ph.D., Heidelberg University

Yu Wang (2004), *Assistant Professor of Computer Science*, B.S., M.S., Tsingshua University; Ph.D., Illinois Institute of Technology

Brenda J. Ward (2005), *Lecturer in Kinesiology,* B.A., Belmont Abbey College; M.S., State University of New York College at Cortland

Jennifer M. Warner (1999), *Lecturer in Biology,* B.S., University of North Carolina at Chapel Hill; M.S., University of North Carolina at Charlotte

Bradley L. Warren (2004), *Assistant Professor and Librarian*, B.A., M.L.S., Indiana University

Kimberly A. Warren (2005), *Assistant Professor of Civil and Environmental Engineering,* B.S., Virginia Polytechnic Institute and State University; M.S., Ph.D., North Carolina State University

Janice Warren-Findlow (2005), *Assistant Professor of Public Health Sciences*, B.A., Moravian College; M.B.A., Lehigh University; Ph.D., University of Illinois at Chicago

Zachary J. Wartell (2005), *Assistant Professor of Computer Science*, B.S., Ph.D., George Institute of Technology

Amy Wartham (2002), *Lecturer in Management,* B.S., M.B.A., Winthrop University

Gregory Watkins (2002), *Assistant Professor of Engineering Technology,* B.S., North Carolina State University; M.E., Old Dominion University; Ph.D., University of North Carolina at Charlotte

Sandra L. Watts (2005), *Lecturer in Spanish,* A.B., Cornell University; M.A., University of Michigan

Coral Barborie Wayland (1998), *Associate Professor of Anthropology, Director of Women's Studies, and Adjunct Professor of Latin American Studies,* B.A., University of Florida; Ph.D., University of Pittsburgh

Matthew S. Webster (1996), *Associate Professor of Theatre,* B.A., California State University San Bernardino; M.A., University of New Mexico; M.F.A., University of Hawaii

Murray Alexander Webster Jr. (1993), *Professor of Sociology,* A.B., M.A., Ph.D., Stanford University

Gregory B. Weeks (2000), *Associate Professor of Political Science,* A.B., University of California-Berkeley; M.A., San Diego State University; Ph.D., University of North Carolina at Chapel Hill

David Weggel (2002), *Assistant Professor of Civil and Environmental Engineering,* B.S., M.S., Drexel University; Ph.D., University of Texas

Quiming Wei (2005), *Assistant Professor of Mechanical Engineering and Engineering Science,* B.S., M.Erg., Northwestern Polytechnic University; Ph.D., North Carolina State University

Barnet M. Weinstock (1977), *Professor of Mathematics*, A.B., Columbia College; Ph.D., Massachusetts Institute of Technology

Jennifer Welbourne (2002), *Assistant Professor of Psychology,* B.A., Carroll College; M.A., Ph.D., Ohio State University

Jeanie Maxine Welch (1988), *Professor and Librarian*, B.A., M.A., University of Denver; M.I.M., American Graduate School of International Management

Thomas Paul Weldon (1995), *Associate Professor of Electrical Engineering,* B.S., M.S., Ph.D., Pennsylvania State University

Betsy West (1998), *Chair of Instruction, College of Architecture, and Associate Professor of Architecture*, B.Arch., North Carolina State University; M.Arch., Yale University

Mark Irwin West (1984), *Professor of English*, B.A., Franconia College; M.E.A.S., University of Wisconsin-Green Bay; Ph.D., Bowling Green State University

Stephen R. Westman (2003), *Associate Professor and Librarian*, B.M., University of Michigan; M.M., Louisiana State University; M.L.S., University of Illinois at Urbana-Champaign

Beth Whitaker (2002), *Assistant Professor of Political Science,* B.A., Princeton University; M.A., Ph.D., University of North Carolina at Chapel Hill

James Daniel White, Jr. (1971), *Associate Professor of Religious Studies*, B.A., Campbell College; Ph.D., University of Pennsylvania

Richard Bert White (1983), *Professor of Special Education and Child Development*, B.A., Miami University; M.S.Ed., Ed.D., Indiana University

Wayne White (2002), *Assistant Professor of Educational Leadership,* B.S., James Madison University; M.A., Hampton University; Ph.D., Virginia Polytechnic Institute and State University

Joseph Martin Whitmeyer (1993), *Professor of Sociology,* B.S., Wright State University; M.A., Ph.D., University of Washington

Bruno John Wichnoski (1974), *Associate Professor of Mathematics*, B.S., Drexel University; M.S., Ph.D., Tulane University

Gregory Alan Wickliff (1991), *Associate Professor of English*, B.A., Miami University; M.A., Ph.D., Purdue University

Edward Wierzalis (2002), *Assistant Professor of Counseling,* B.S., Pennsylvania State University; M.Ed., Temple University; Ph.D., University of Virginia

Greg A. Wiggan (2006), *Assistant Professor of Middle, Secondary, and K-12 Education,* B.S., Morris Brown College; M.S., Florida International University; Ph.D., Georgia State University

Casper E. Wiggins, Jr. (1999), *Chair, Department of Accounting, Associate Dean of Graduate Programs and Research, and The Big Five Professorship in Accounting,* B.A., Wofford College; M.B.A., University of Georgia; M.S., Clemson University; D.B.A., University of Tennessee

Volker Wihstutz (1987), *Professor of Mathematics*, Diploma, University of Frankfurt, Germany; Ph.D., University of Bremen, Germany

Robert Gerald Wilhelm (1993), *Executive Director, Charlotte Research Institute, and Professor of Mechanical Engineering and Engineering Science*, B.S., Wichita State University; M.S., Purdue University; Ph.D., University of Illinois at Urbana-Champaign

Anthony Barry Wilkinson (1987), *Professor of Computer Science*, B.Sc., University of Salford; M.Sc., Ph.D., University of Manchester

Amy L. Williford (2004), *Lecturer in Kinesiology*, B.A., University of North Carolina at Wilmington; M.S., East Stroudsburg University

Andrew R. Willis (2005), *Assistant Professor of Electrical and Computer Engineering,* B.S., Worcester Polytechnic Institute; M.S., Ph.D, Brown University

Margaret C. Wilmoth (1996), *Professor of School of Nursing,* B.S.N., M.S., University of Maryland; Ph.D., University of Pennsylvania

Dale-Marie C. Wilson (2006), *Assistant Professor of Computer Science,* B.S., New York University; M.S., Ph.D., Auburn University

David C. Wilson (2003), *Assistant Professor of Software and Information Systems*, B.A., Rockford College; M.S., Ph.D., Indiana University at Bloomington

Mark R. Wilson (2004), *Assistant Professor of History*, A.B., Harvard University; A.M., Ph.D., The University of Chicago

R. Gary Wilson (2005), *Lecturer in Mechanical Engineering and Engineering Science,* B.S., Tennessee Technological University; M.S., University of Illinois-Urbana Champaign; Ph.D., Case Western Reserve University

Michael Winecoff (2001), *Assistant University Librarian for Library Systems and Assistant Professor,* B.A., University of North Carolina at Charlotte; M.L.S., University of North Carolina at Greensboro

Susan J. Winter (1999), *Assistant Professor of Business Information Systems and Operations Management,* B.A., University of California-Berkeley; M.A., Claremont Graduate School; Ph.D., University of Arizona

Carl B. Wolfe, Jr. (2003), *Lecturer of Biology*, B.S., Guilford College; M.S., Western Carolina University; Ph.D., University of Tennessee

Peter Lee Wong (1988), *Associate Professor of Architecture*, B.A., University of Washington; M.Arch., University of Pennsylvania

Bret A. Wood (2000), *Lecturer in Kinesiology,* B.S., West Virginia University; M.Ed., University of North Carolina at Charlotte

Charles L. Wood (2005), *Assistant Professor of Special Education and Child Development,* B.S., Western Michigan University; M.Ed., Ph.D., Ohio State University

Karen Dutson Wood (1985), *Professor of Reading and Elementary Education,* B.A., Catawba College; M.A., Ed.S., Appalachian State University; Ph.D., University of Georgia

Wendy M. Wood (1994), *Associate Professor of Special Education and Child Development,* B.A., Lynchburg College; M.Ed., Ph.D., Virginia Commonwealth University

Bradley Wright (2002), *Assistant Professor of Political Science*, B.A., Hope College; M.P.A., Western Michigan University; Ph.D., State University of New York at Albany

Jy Shing Wu (1980), *Professor of Civil and Environmental Engineering*, B.S., National Taiwan University; M.S., Asian Institute of Technology, Thailand; Ph.D., Rutgers University

Xintao Wu (2001), *Associate Professor of Computer Science,* B.S., University of Science and Technology of China; M.S., Beijing Institute of Control Engineering; Ph.D., George Mason University

Wei-Ning Xiang (1990), *Professor of Geography,* B.S., Beijing Normal University; M.R.P., University of Massachusetts; Ph.D., University of California-Berkeley

Jing Xiao (1990), *Professor of Computer Science*, B.S., Beijing Normal University; M.A., Ph.D., University of Michigan

Jiang Xie (2004), *Assistant Professor of Electrical and Computer Engineering*, B.S., Tsinghua University; M. Phil, The Hong Kong University of Science and Technology; M.S., Ph.D., Georgia Institute of Technology

Mingxin Xu (2004), *Assistant Professor of Mathematics*, M.S., Syracuse University; M.S., Ph.D., Carnegie Mellon University

Terry T. Xu (2004), *Assistant Professor of Mechanical Engineering and Engineering Science*, B.S., Shanghai University, China; M. Phil; Hong Kong University of Science and Technology, China; Ph.D., Northwestern University

Eunice E.Yang (2007), *Assistant Professor of Engineering Technology,* B.S., University of Hawaii Manoa; M.S., California State University Long Beach; Ph.D., Pennsylvania State University

Jing Yang (2005), *Assistant Professor of Computer Science,* B.A., Tsinghua University, China; M.S., Ph.D., Worcester Polytechnic Institute

Sarah Kathryn Yarbrough (2003), Lecturer in Accounting, B.S., University of North Carolina at Charlotte; M.B.A., Winthrop University

Christopher Yengo (2004), *Assistant Professor of Biology*, B.S., Indiana University, M.S. University of Wyoming, Ph.D., The University of Vermont

Maria Grace Yon (1987), *Associate Professor of Reading and Elementary Education, and Adjunct Professor of Women's Studies*, B.S., Concord College; M.A., West Virginia University; Ed.D., Virginia Polytechnic Institute and State University

David Thomas Young (1985), *Chair, Department of Civil Engineering, and Professor of Civil and Environmental Engineering*, B.S.C.E., M.S.C.E., Clemson University; Ph.D., Virginia Polytechnic Institute and State University

G. Michael Youngblood (2006), *Assistant Professor of Computer Science,* A.S., Thomas Edison State College; B.S., M.S., Ph.D., University of Texas at Arlington

Paul A. Youngman (2003), *Assistant Professor of German*, B.S., Washington and Lee University; M.A., Ph.D., University of North Carolina at Chapel Hill

Diane Lee Zablotsky (1992), *Associate Dean for Student Services, College of Arts and Science; and Associate Professor of Sociology,* B.S., Pennsylvania State University; M.A., State University of New York at Binghamton; Ph.D., University of Maryland

Kelly L. Zellars (2000), *Associate Professor of Management,* B.A., M.B.A., University of Notre Dame; M.S., University of Wisconsin-Milwaukee; Ph.D., Florida State University

Jian X. Zhang (1996), *Associate Professor of Biology,* M.D., Chengdu College of Sports Medicine; M.A., Springfield College; Ph.D., University of South Carolina

Zhi Yi Zhang (1990), *Associate Professor of Mathematics*, B.A., Hunter College; M.S., Ph.D., Rutgers University

Kexin Zhao (2007), *Assistant Professor of Business Information Systems and Operations Management,* B.A., Tsinghua University, China; Ph.D., University of Illinois at Urbana-Champaign

Wei Zhao (2004), *Assistant Professor of Sociology*, B.A., M.A., Beijing University, China; Ph.D., Duke University

Yuliang Zheng (2001), *Professor of Software and Information Systems,* B.Sc., Nanjing Institute of Technology, China; M.E., Ph.D., Yokohama National University, Japan

Aixi Zhou (2007), *Assistant Professor of Engineering Technology,* B.S., Shenyang Institute of Aeronautical Engineering, China; M.S., Lanzhou University of Technology, China; Ph.D., Virginia Polytechnic Institute

Jing Zhou (2006), *Assistant Professor of Business Information Systems and Operations Management,* B.S., Fudan University, China; M.S., Ph.D., University of Texas at Dallas

Weihua Zhou (2005), *Assistant Professor of Mathematics and Statistics,* B.S., M.S., University of Science and Technology of China; M.S., Ph.D., University of Texas at Dallas

You-lan Zhu (1990), *Professor of Mathematics*, Ph.D., Qinghua University, China

Arthur L. Zillante (2006), *Assistant Professor of Economics,* B.S., M.S., Ph.D., Florida State University

Richard Allen Zuber (1978), *Chair, Department of Economics, and Professor of Economics*, B.A., Wake Forest University; M.A., Ph.D., University of Kentucky

EMERITUS FACULTY

(The year in parentheses represents the year of appointment)

Silverio P. Almeida (1989), *Professor of Physics and Optical Science Emeritus,* B.A., Clark University; M.S., Massachusetts Institute of Technology; Ph.D., Cambridge University

David James Amante (1974), *Associate Professor of English Emeritus*, A.B., M.A., Ph.D., University of Michigan

Eric Anderson (1967), *Professor of Art Emeritus*, B.F.A., Miami University; M.F.A., Pratt Institute

Clyde Robert Appleton (1978), *Associate Professor of Music Emeritus*, A.B., Park College; M.Mus.Ed., University of Arizona; Ph.D., New York University

Carl R. Ashbaugh (1991), *Professor of Educational Administration, Research, and Technology Emeritus,* A.A., Graceland College; B.S., Ohio University; M.Ed., Miami University; Ph.D., Ohio State University

Viviane Lloyd Avant (1979), *Instructor in Nursing Emerita,* B.S., High Point College; M.A.Ed., East Carolina University

David Paul Bashor (1971), *Assistant Professor of Biology Emeritus*, B.S., Ph.D., Florida State University

David Martin Bayer (1970), *Professor of Civil and Environmental Engineering Emeritus*, B.C.E., Georgia Institute of Technology; M.S.C.E., Ph.D., Vanderbilt University; P.E.

Jack Mitchell Beasley (1972), *Associate Professor of Theatre Emeritus*, B.A., Vanderbilt University; M.F.A., University of Georgia

Sue M. Bishop (1992), *Dean Emerita, College of Health and Human Services, and Professor of Health and Human Services*, B.S.N., Murray State University; M.S.N., Ph.D., Indiana University

Kathleen Underman Boggs (1984), *Associate Professor of School of Nursing Emerita*, B.S.N., Niagara University; M.S.N., Ph.D., University of Maryland

Rachel Ann Bonney (1973), *Associate Professor of Anthropology Emerita*, B.A., M.A., University of Minnesota; Ph.D., University of Arizona

Doris Anne Bradley (1968), *Associate Professor and Librarian Emerita,* A.B., Wilson College; B.S.L.S., University of North Carolina at Chapel Hill

Edwina Bringle (1973), *Associate Professor of Art Emerita*

William Britt (1972), *Professor of Middle, Secondary, and K-12 Education Emeritus,* B.S. Western Carolina University; M.Ed., University of North Carolina at Chapel Hill; Ed.D., University of Tennessee

Glenn Stephen Burne (1971), *Professor of English Emeritus*, B.A., University of California-Berkeley;

Diplome d' Etudes, University of Paris; M.A., Ph.D., University of Washington

Sherman LeRoy Burson, Jr. (1963), *Dean Emeritus, College of Arts and Sciences, and Charles H. Stone Professor of Chemistry Emeritus,* B.S., Ph.D., University of Pittsburgh

Chandler Mathewson Bush (1985), *Associate Professor of Management Information Systems and Operations Management Emeritus,* B.S., Duke University; M.S., M.L.A., Southern Methodist University; Ph.D., University of Texas at Arlington

Newell Richard Bush (1967), *Professor of French Emeritus*, A.B., Miami University; M.A., Ph.D., Columbia University

Stewart Fowler Bush (1969), *Professor of Chemistry Emeritus*, A.B., Erskine College; Ph.D., University of South Carolina

Elinor Brooks Caddell (1965), *A. Sue Kerley Professor of Nursing Emerita*, B.S.N.E., M.S.N., Duke University; R.N.

Barbara Carper (1989), *Professor of Nursing Emerita*, B.S., Texas Woman's University; M.Ed., Ed.D., Columbia University

Jane Judy Carroll (1995), *Associate Professor of Counseling, Special Education, and Child Development Emerita,* B.S., University of Maine; M.S., Florida Institute of Technology; Ed.S., M.Ed., Ph.D., University of Florida

Ann Cathey Carver (1969), *Professor of English Emerita*, B.A., Limestone College; M.A., University of Arkansas; Ph.D., Emory University

Susan Cernyak-Spatz (1972), *Associate Professor of German Emerita*, B.A., Southwest Missouri State College; M.A., Ph.D., University of Kansas

John Harvie Chaffin (1989), *Associate Professor of Manufacturing Engineering Emeritus,* B.A., University of Virginia; M.S., Ph.D., University of North Carolina at Chapel Hill

Charles Burnon Christie (1971), *Associate Professor of Electrical Engineering Technology Emeritus*, B.S.E.E., Milwaukee School of Engineering; M.E., Pennsylvania State University

Dean Wallace Colvard (1966), *Chancellor Emeritus*, B.S., Berea College; M.A., University of Missouri; Ph.D., Purdue University

Robert Ballard Conrad (1970), *Professor of Business Information Systems and Operations Management Emeritus,* B.S., Ph.D., University of North Carolina at Chapel Hill

Michael Frederic Cornick (1985), *Associate Professor of Accounting Emeritus*, B.S., Purdue University; M.B.A., Ph.D., University of North Carolina at Chapel Hill; C.P.A.

Louis Gilbert Daignault (1982), *Associate Professor of Chemistry Emeritus,* B.S., Clarkson College of Technology; Ph.D., University of Rochester

William Albert Dailey (1969), *Associate Professor of Music Emeritus* B.M.E., Bethany College; M.M.E., Indiana University; Ph.D., The Catholic University of America

Charles William Dean (1982), *Professor of Criminal Justice Emeritus*, B.A., Asbury College; M.A., Ph.D., University of Illinois

Paul Henry DeHoff (1978), *Professor of Engineering Science Emeritus,* B.S.M.E., M.S., Pennsylvania State University; Ph.D., Purdue University

Louis Diamant (1963), *Professor of Psychology Emeritus*, B.S., M.A., New York University; Ph.D., Yeshiva University

Dennis Daniel Dorin (1972), *Professor of Political Science Emeritus,* B.A., Arizona State University; M.A., Ph.D., University of Virginia

Nancy Edwards (1968), *Professor of Biology Emerita*, B.A., Agnes Scott College; M.A., Ph.D., University of North Carolina at Chapel Hill

George Epstein (1985), *Professor of Computer Science Emeritus*, B.S., California Institute of Technology; M.S., University of Illinois; Ph.D., University of California-Los Angeles

Jack Burnie Evett (1967), *Professor of Civil and Environmental Engineering Emeritus,* B.S., M.S., University of South Carolina; Ph.D., Texas A&M University

Charles Denton Fernald (1971), *Associate Professor of Psychology Emeritus*, B.S., University of Massachusetts; Ph.D., Indiana University

Gary Paul Ferraro (1971), *Professor of Anthropology Emeritus,* B.A., Hamilton College; M.A., Ph.D., Syracuse University

Daniel William Fleitas (1970), *Associate Professor of Political Science*, B.S.P., University of Florida; B.A., University of South Florida; M.S., Ph.D., Florida State University

Carol Fray (1984), *Associate Professor of Nursing Emerita*, A.B., Hunter College; B.S.N., Cornell University; M.A., Columbia University

E.K. Fretwell Jr. (1979), *Chancellor Emeritus and Professor of Education Emeritus*, A.B., Wesleyan University; M.A.T., Harvard University; Ph.D., Columbia University

Karl Michael Gabriel (1963), *Professor of German Emeritus,* Ph.D., University of Vienna, Austria

Leon H. Gatlin, III (1966), *Associate Professor of English Emeritus*, B.A., Wake Forest College; M.A., Ph.D., University of Iowa

Ronald A. Gestwicki (1972), *Associate Professor of Religious Studies Emeritus,* B.A., University of Buffalo; S.T.M., The General Theological Seminary-New York; Ph.D., Syracuse University

Virginia Shaw Geurin (1972), *Professor of Management Emerita,* B.S., M.A., M.B.A., Ph.D., University of Arkansas

Robert Harry Gibson (1965), *Professor of Chemistry Emeritus,* A.B., Erskine College; M.A., Ph.D., Columbia University

Robert Milnor Gleaves (1969), *Associate Professor of Spanish Emeritus*, B.A., David Lipscomb College; M.A., Ph.D., Vanderbilt University

Barbara Ann Goodnight (1967), *Senior Associate Vice Chancellor for Academic Affairs and Professor of Sociology Emerita,* B.S., Texas Woman's University; M.A., Ph.D., Louisiana State University

Richard Greene (1988), *Professor of Electrical Engineering Emeritus*, B.S., Lehigh University; Ph.D., University of Pennsylvania

Robert Waters Grey (1969), *Associate Professor of English Emeritus*, A.B., Brown University; M.A., University of Virginia

Gloria A. Hagopian (1993), *Professor of Nursing Emerita,* B.S.N., M.S.N., Ed.D., University of Rochester

Mary Turner Harper (1971), *Associate Professor of English Emerita*, A.B., Livingstone College; M.Ed., University of North Carolina at Greensboro; Ph.D., Union Graduate School.

David T. Hartgen (1989), *Professor of Geography Emeritus,* B.S., Duke University; M.S., Ph.D., Northwestern University

Sue Greenwood Head (1976), *Associate Professor of Nursing Emerita*, A.A., Central Piedmont Community College; B.S., University of North Carolina at Charlotte; M.S.N., University of North Carolina at Chapel Hill

John Henry Healey (1973), *Associate Professor of Kinesiology Emeritus*, B.S., M.S., Northern Illinois University; Ph.D., University of Utah

K. Randall May Heath (1981), *Associate Professor and Librarian Emerita*, B.A., Memphis State University; M.L.S., University of Illinois

Charles Clinton Hight (1976), *Dean Emeritus, College of Architecture, and Professor of Architecture*, B.S.C.E., University of Maryland; B.Arch., Auburn University

Philip Elwin Hildreth (1967), *Distinguished Professor of Biology Emeritus*, A.B., Dartmouth College; M.A., Ph.D., University of California-Berkeley

Esther Page Hill (1972), *Associate Professor of Art Emerita*, B.S., M.A., Columbia University; Ph.D., Florida State University

Dolan Hinson (1968), *Associate Professor of Accounting Emeritus*, B.S., Pfeiffer College; M.B.A., New York University; Ph.D., University of South Carolina; C.M.A., C.L.U., Ch.F.C.

Joseph David Hirschel (1977), *Professor of Criminal Justice Emeritus,* B.A., Cambridge University; M.A., Ph.D., State University of New York at Albany

Heather Hoover (1993), *Associate Professor of Art Emerita,* B.A., Smith College; M.F.A., University of North Carolina at Greensboro

Robert W. Hornaday (1984), *Professor of Management Emeritus*, B.A., University of Iowa; M.A., University of Missouri; M.B.A., D.B.A., Florida State University

John Leonard Huffman (1993), *Professor of Communication Studies Emeritus,* B.A., Black Hills State College; Ph.D., University of Iowa

Debra Hymovich (1993), *Professor of Nursing Emerita, Department of School of Nursing,* B.S., Skidmore College; M.A., Columbia University; Ph.D., University of Maryland

Jay Bruce Jacoby (1978), *Professor of English Emeritus*, B.A., University of Cincinnati; M.A., Villanova University; Ph.D., University of Pittsburgh

Nish A. Jamgotch, Jr. (1966), *Professor of Political Science Emeritus,* B.A., M.A., University of Minnesota; Ph.D., Claremont Graduate School

Janice K. Janken (1989), *Associate Professor of School of Nursing Emerita*, B.S.N., M.S.N., Ph.D., University of Illinois

Marinell Hargrove Jernigan (1972), *Professor of Nursing Emerita, Department of School of Nursing,* B.S., Johns Hopkins University; M.S., Ed.D., University of Alabama

Michael Kampen (1978), *Associate Professor of Art Emeritus*, B.A., University of Minnesota; M.A., Tulane University; Ph.D., University of Pennsylvania

Charles Howard Kaplan (1986), *Associate Professor of Psychology Emeritus*, B.A., Kent State University; M.A., Ed.M., Ph.D., Columbia University

Laura Duhan Kaplan (1989), *Professor of Philosophy and Adjunct Associate Professor of Women's Studies Emerita*, B.A., Brandeis University; M.Ed., Cambridge College; M.A., Ph.D., Claremont Graduate School

William Frederick Kennedy (1978), *Associate Professor of Finance Emeritus*, B.A., University of Richmond;

M.A., Old Dominion University; Ph.D., Virginia Polytechnic Institute and State University

Rhyn Hyun Kim (1965), *Professor of Mechanical Engineering Emeritus*, B.S.M.E., Seoul National University; M.S.M.E., Ph.D., Michigan State University

Frances King (1977), *Associate Professor of Nursing Emerita*, B.S.N., University of North Carolina at Chapel Hill; M.Ed., University of North Carolina at Charlotte

Lee Ellis King (1976), *Professor of Civil and Environmental Engineering Emeritus*, B.S.C.E., M.C.E., North Carolina State University at Raleigh; D.Eng., University of California-Berkeley; P.E.

James Richard Kuppers (1964), *Professor of Chemistry Emeritus*, B.S., University of Florida; M.S., Louisiana State University; Ph.D., University of Florida

Peter Andre Lamal (1970), *Associate Professor of Psychology Emeritus,* B.A., St. Thomas College; M.A. Indiana State University; Ph.D., University of Wisconsin

Alan Leslie Lambert (1974), *Professor of Mathematics Emeritus*, B.S., M.S., University of Miami; Ph.D., University of Michigan

Deborah Michael Langsam (1980), *Associate Professor of Biology Emerita*, B.S., Brooklyn College; M.A., City University of New York; Ph.D., Duke University

Harry John Leamy (1992), *Associate Executive Director and Chief Scientist for the Charlotte Research Institute, and Professor of Physics and Optical Science Emeritus*, B.A., University of Missouri at Rolla; Ph.D., Iowa State University

Miriam Almaguer Leiva (1966), *Bonnie E. Cone Distinguished Professor of Teaching and Professor of Mathematics Emerita*, B.A., Guilford College; M.A., University of North Carolina at Chapel Hill; Ph.D., Union Graduate School

John Mitchell Lincourt (1973), *Bonnie E. Cone Distinguished Professor of Teaching (Philosophy) Emeritus,* B.A., St. Anselm's College; M.A., Niagara University; Ph.D., State University of New York at Buffalo

Cheng Liu (1970), *Professor of Engineering Technology Emeritus*, B.S.C.E., National Taiwan University; M.S.C.E., West Virginia University; P.E.

Gary Long (1972), *Associate Professor of Psychology Emeritus*, B.A., Wake Forest University; M.S., North Carolina State University; Ph.D., University of Waterloo

J. Dennis Lord (1970), *Professor of Geography Emeritus*, B.A., M.A., Ph.D., University of Georgia

Schley Roosevelt Lyons (1969), *Dean Emeritus, College of Arts and Sciences, and Professor of Political Science*, B.S., B.A., Shepherd College; M.A., Ph.D., American University

Roderick Macy MacKillop (1973), *Professor of Art Emeritus*, A.B., M.F.A., Tufts University

Robert John MacLean (1981), *Associate Professor of Architecture Emeritus*, B.Arch., University of California-Berkeley; M.A., University of California-Los Angeles

William Joseph McCoy (1970), *Professor of Political Science Emeritus,* A.B., M.A., Western Kentucky University; Ph.D., University of Tennessee

Jonnie Horn McLeod (1975), *Professor of Education Emerita*, B.A., Sophie Newcomb College; M.D., Tulane University

Ralph O. McLeod (1970), *Assistant Professor of Spanish Emeritus,* B.Ed., University of Toledo; M.A.T., Ph.D., University of New Mexico

John Rupert McNair (1978), *Associate Professor of English Emeritus,* A.A., University of Southern Colorado; B.S., Colorado State University; M.A., Ph.D., University of Colorado

Julian Dewey Mason, Jr. (1966), *Professor of English Emeritus*, A.B., University of North Carolina at Chapel Hill; M.A., George Peabody College for Teachers; Ph.D., University of North Carolina at Chapel Hill

James Francis Matthews (1964), *Professor of Biology Emeritus,* A.B., Atlantic Christian College; M.S., Cornell University; Ph.D., Emory University

Thomas William Mattingly, Jr. (1974), *Associate Professor of Chemistry Emeritus*, B.S., Georgetown University; Ph.D., Yale University

Ruth Nichols Mauldin (1970), *Associate Professor of Nursing Emerita,* B.A., Duke University; M.S., University of Alabama

Bertha Lyons Maxwell-Roddey (1978), *Frank Porter Graham Professor of African-American and African Studies Emerita*, B.A., Johnson C. Smith University; M.A., University of North Carolina at Greensboro; Ph.D., Union Graduate School

Terrill Wayne Mayes (1967), *Associate Professor of Physics and Optical Science Emeritus*, B.S., Western Kentucky University; M.A., Ph.D., Vanderbilt University

Pauline Shannon Mayo (1976), *Professor of Nursing Emerita,* B.S.N., Oklahoma Baptist University; M.S.N., Ed.D., Case Western Reserve University

Timothy Dean Mead (1979), *Professor of Political Science Emeritus,* A.B., M.A., Ph.D., George Washington University

Edward Fulton Menhinick (1965), *Professor of Biology Emeritus*, B.A., Emory University; M.S., Cornell University; Ph.D., University of Georgia

Charles Seeley Merrill (1969), *Associate Professor of German Emeritus,* B.A., M.A., North Texas State University; Ph.D., University of Texas at Austin

Jeffrey Frederick Meyer (1973), *Professor of Religious Studies Emeritus*, B.A., Duns Scotus College; M.A., University of Dayton; M.A., Ph.D., University of Chicago

Charles Edward Mobley, Jr. (1972), *Associate Professor of Industrial Engineering Technology Emeritus*, B.S.I.E., M.S.I.E., Mississippi State University; P.E.

Hassan Modaress-Razavi (1980), *Associate Professor of Computer Science Emeritus,* B.S., M.S., Ph.D., West Virginia University

Ganesh Prasad Mohanty (1972), *Bonnie E. Cone Distinguished Professor of Teaching and Professor of Engineering Science Emeritus*, B.Sc., Utkal University; M.S., Michigan Technological University; Ph.D., Illinois Institute of Technology

Christopher Morgan (1984), *Associate Professor of Architecture Emeritus*, B.A., Oberlin College; B.Arch., University of Oregon; M.Arch., University of Idaho

Dorlan Dean Mork (1972), *Associate Professor of Education Emeritus,* B.A., Luther College; M.A., Western Carolina University; Ed.D., University of Florida

Harvey Frank Murphy (1965), *Professor of Kinesiology Emeritus,* B.A., Troy State College; M.A., Columbia University; Ph.D., University of Illinois

Richard Eugene Neel (1978), *Professor of Economics Emeritus*, B.S., M.S., University of Tennessee; Ph.D., Ohio State University

Sally Winn Nicholson (1974), *Professor of Nursing Emerita, Department of School of Nursing,* B.S.N., University of North Carolina at Chapel Hill; M.N., Emory University; Ph.D., University of Maryland

David Eugene Nixon (1963), *Professor of Mathematics Emeritus*, B.S., M.S., North Carolina State College; Ph.D., North Carolina State University

Stella M. Nkomo (1983), *Professor of Management Emerita,* B.S., Bryant College; M.B.A., University of Rhode Island; Ph.D., University of Massachusetts

Nelson Rudolph Nunnally (1974), *Professor of Earth Sciences Emeritus*, B.S., M.A., University of Georgia; Ph.D., University of Illinois

Edward Oberhofer (1967), *Associate Professor of Physics and Optical Science Emeritus*, B.S., North Carolina State College; M.S., Ph.D., North Carolina State University

Allan Van Palmer (1968), *Professor of Marketing Emeritus*, B.S., Iowa State University; M.B.A., Ph.D., University of North Carolina at Chapel Hill

Alexander Spero Papadopoulos (1978), *Professor of Mathematics Emeritus*, B.S., M.S., University of Rhode Island; M.S., Ph.D., Virginia Polytechnic Institute and State University

William Macfarlane Park (1972), *Associate Professor of German Emeritus*, M.A., University of Edinburgh; Ph.D., University of Colorado

Edna Lorraine Penninger (1968), *Professor and Librarian Emerita,* B.A., Flora McDonald College; M.A., University of Denver; M.A.Ed., University of North Carolina at Charlotte

Edward Spaulding Perzel (1965), *Professor of History Emeritus,* B.A., M.A., University of Cincinnati; Ph.D., Rutgers University

Douglas Howard Phillips (1995), *Professor of Electrical Engineering Emeritus,* B.S., Oklahoma State University; M.A., University of Oklahoma; Ph.D., University of New Mexico

Robert A. Pittillo (1982), *Professor of Education Emeritus*, B.S., Western Carolina University; M.Ed., Ed.D., Duke University

John Pleasants (1969), *Associate Professor of Education Emeritus*, A.B., M.A.T., Ph.D., University of North Carolina at Chapel Hill

Victor Louis Pollak (1968), *Professor of Physics and Optical Science Emeritus*, B.Sc., Case Institute of Technology; Ph.D., Washington University

Gerald Frederic Pyle (1980), *Professor of Public Health Sciences Emeritus,* B.A., Kent State University; M.A., Ph.D., University of Chicago

Gyorgy E. Revesz (1991), *Professor of Computer Science Emeritus,* B.S., Ph.D., Eotvos University of Budapest

Robert William Rieke (1962), *Professor of History Emeritus*, B.A., Carleton College; M.A., Ph.D., University of Wisconsin

Joseph Bernard Roberts (1973), *Associate Professor of Education Emeritus,* B.A., University of Puerto Rico; M.A., University of Illinois; Ed.D., Columbia University

Bryan Eugene Robinson (1977), *Professor of Counseling, Special Education, and Child Development Emeritus,* B.A., East Carolina University; M.Ed., University of North Carolina at Charlotte; Ph.D., University of North Carolina at Greensboro

Edwin Lee Rogers (1966), *Associate Professor of Economics Emeritus*, A.B., Lenoir Rhyne College; Ph.D., University of North Carolina at Chapel Hill

Russell Gene Rose (1969), *Associate Professor of French*, B.A., Wilmington College; M.A., Ph.D., University of Kentucky

Walter John Roth (1968), *Assistant Professor of Mathematics Emeritus,* B.S., University of Michigan; M.S., Ph.D., University of New Mexico

Bobbie Haynes Rowland (1969), *Professor of Counseling, Special Education, and Child Development Emerita*, A.B., M.S., Ph.D., University of North Carolina at Greensboro

Earl Richard Sage (1973), *Associate Professor of Management Emeritus,* B.S.B.A., Ohio State University; M.B.A., Harvard University; Ph.D., Ohio State University

Paul Antonius Saman (1963), *Professor of French Emeritus,* Ph.D., Charles University

Joseph Francis Schell (1964), *Professor of Computer Science Emeritus,* B.S., University of Dayton; M.A., Ph.D., Indiana University

Norman Willard Schul (1967), *Professor of Geography Emeritus*, B.A., M.A., Miami University; Ph.D., Syracuse University

Morton Shapiro (1964), *Associate Professor of English Emeritus*, A.B., M.A., University of Miami; Ph.D., University of Alabama

James David Shumaker (1972), *Professor of Philosophy Emeritus,* A.B. Pfeiffer College; M.A., Ph.D., Florida State University

Ronald Bernard Simono (1967), *Professor of Psychology Emeritus*, B.S., St. Norbert College; M.S., Ph.D., University of Wisconsin

Hoyle Mitchel Simpson (1982), *Associate Professor of Physics and Optical Science Emeritus*, B.A., Pfeiffer College; Ph.D., Clemson University

Clarence E. Smith, Jr. (1970), *Professor of Educational Leadership Emeritus,* B.A., M.A.T., Ed.D., University of North Carolina at Chapel Hill

Frederik N. Smith (1984), *Professor of English Emeritus,* B.S., Loyola College; M.A., Ph.D., University of Virginia

William Alexander Smith (1966), *Associate Professor of Electrical Engineering Emeritus*, A.A. Charlotte College; B.S., M.S., Clemson University; P.E.

Robert Douglas Snyder (1975), *Dean Emeritus, The William States Lee College of Engineering, and Professor of Engineering Science,* B.S.M.E., Indiana Institute of Technology; M.S.M.E., Clemson University; Ph.D., West Virginia University; P.E.

David Sohn (1964), *Associate Professor of Psychology Emeritus,* B.A., Brooklyn College; Ph.D., University of Texas at Austin

John Willis Sommer (1993), *Knight Distinguished Professor of Public Policy, Professor of Geography, and Professor of Political Science Emeritus,* A.B., Dartmouth College; A.M., Ph.D., Boston University

Joseph Richard Spence (1979), *Professor of Art Emeritus*, B.S., Edinboro State College; M.Ed., D.Ed., Pennsylvania State University

Martha L. Stewart (1958), *Assistant Professor of Mathematics Emerita*, A.B., Winthrop College; A.M., Duke University

Alfred Wright Stuart (1969), *Professor of Geography Emeritus*, B.S., University of South Carolina; M.S., Emory University; Ph.D., Ohio State University

Frances Lovenia Summerville (1968), *Associate Professor and Librarian Emerita*, B.A., St. Andrews Presbyterian College; M.L.S., Peabody College

Judith Diann Suther (1979), *Professor of French Emerita,* B.A., University of Missouri-Columbia; M.A., University of Michigan; Ph.D., University of Missouri-Columbia

Jane K. Testerman (1997), *Associate Professor of Educational Leadership Emerita,* B.A., M.Ed., University of North Carolina at Charlotte; Ed.S., Appalachian State University; Ed.D., University of North Carolina at Greensboro

Mary Beth Thomas (1980), *Professor of Biology Emerita,* B.A., Agnes Scott College; M.A., Ph.D., University of North Carolina at Chapel Hill

Joan Sinclair Tillotson (1973), *Associate Professor Kinesiology Emerita*, B.S., State University College of New York; M.A., Ph.D., State University of Iowa

Jim Travis (1973), *Associate Professor of Biology Emeritus*, B.S., M.S., East Texas State College; Ph.D., Texas A&M University

Thomas Coke Turner (1966), *Professor of Accounting Emeritus*, B.S., Furman University; M.B.A., University of North Carolina at Chapel Hill; C.P.A.

Lazaros A. Varnas (1968), *Professor of English Emeritus,* Certificate, British Institute; M.A., Ph.D., University of Pennsylvania

Robert Vermillion (1965), *Professor of Physics and Optical Science Emeritus*, A.B., King College; M.S., Ph.D., Vanderbilt University

Dean Bryant Vollendorf (1976), *Associate Professor of Architecture Emeritus,* B.S.Arch., University of Cincinnati; M.Arch., Clemson University

Edward Lowery Walls, Jr. (1971), *Rush S. Dickson Professor of Finance Emeritus*, B.S., University of Maryland; M.A., University of Nebraska; D.B.A., Harvard University

Thomas Walsh (1970), *Associate Professor of Chemistry Emeritus*, A.B., University of Notre Dame; Ph.D., University of California-Berkeley

Samuel Dibble Watson, Jr. (1973), *Professor of English Emeritus*, B.A., Wofford College; M.A., University of Virginia; Ph.D., University of Iowa

James Keith Weekly (1988), *Professor of Marketing Emeritus,* B.S., M.B.A., D.B.A., Indiana University

James H. Werntz, Jr. (1981), *Vice Chancellor for Academic Affairs Emeritus,* B.A., Oberlin College; M.A., Ph.D., University of Wisconsin at Madison

Charles Robertson Whaley (1974), *Assistant Professor of Education Emeritus,* A.B., Princeton University; M.A.T., University of North Carolina at Chapel Hill; Ph.D., University of Texas at Austin

Sadie Hamrick Williamson (1971), *Associate Professor of Accounting Emerita*, A.B., The Women's College of The University of North Carolina; M.S., University of North Carolina at Chapel Hill; C.P.A.

Loy Hahn Witherspoon (1964), *Professor of Philosophy and Religion Emeritus,* A.B., B.D., Duke University; Ph.D., Boston University

James H. Woodward (1989), *Chancellor Emeritus and Professor of Civil and Environmental Engineering Emeritus*, B.S.A.E., M.S.A.E., Ph.D., Georgia Institute of Technology; M.B.A., University of Alabama at Birmingham

Hazel Drye Wright (1966), *Assistant Professor of Mathematics Emerita,* B.S., Appalachian State Teachers College; M.A. Wake Forest College

William David Wubben (1963), *Professor of Economics and Business Administration Emeritus*, B.Ph., M.B.A., University of Chicago; Ph.D., Claremont Graduate School

Alexander Yushkevich (1990), *Professor of Mathematics Emeritus*, B.A., Ph.D., Moscow University; D.E., Dzerzhinsky Military Academy

Gerda Anna Maria Zimmermann (1974), *Associate Professor of Dance Emerita*, Diplom-Gymnastiklehrerin Schule fuer Gymnastiklehrerin; License, Schul fuer Theatertanz; License, School of Fine Arts (Germany)

Glossary

-123-

49ers – The official name for student athletic teams at UNC Charlotte.

49er Card – The ID Card that proves a student is a member of the campus community and entitled to certain services. It is required to check out materials, obtain services, and utilize facilities across campus. It also allows students to access their residence, obtain meals, and make purchases wherever the 49er Account is accepted.

49er Express – One-stop shopping for student services via the web. It combines various systems, user interfaces, and technical solutions already available to the UNC Charlotte community in a single consistent web-based interface. Students should use 49er Express to access web-enabled student services, course information, e-mail, and calendaring.

-A-

Academic advisement – A meeting between a student and an advisor to discuss career plans, program of study, or course selections prior to registration.

Academic calendar – An official list of dates found at the beginning of the *Catalog* and on the University Registrar's web site (www.registrar.uncc.edu). The academic calendar specifies the dates for semesters and terms, enrollment periods, examination periods, holidays, periods classes are not in session, and commencement.

Academic discipline – A subject area of study (e.g., English, marketing, psychology).

Academic drop – Dismissal from the school for academic ineligibility (unsatisfactory academic work).

Academic probation – A status resulting from unsatisfactory academic work; a warning that the student must improve academic performance or be dismissed after a specific period of time.

Academic record – Official transcript.

Academic standing – The scholastic standing of a student based on his/her grade point average (GPA).

Academic year – The period of formal academic instruction, extending from August through May. It is divided into fall and spring semesters. Students may also take courses during summer sessions.

Accreditation – The Commission on Colleges of the **S**outhern **A**ssociation of **C**olleges and **S**chools (SACS) is the recognized regional accrediting body in the eleven U.S. Southern states (Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia) and in Latin America for those institutions of higher education that award associate, baccalaureate, master's or doctoral degrees. Accreditation is certification that a college meets a set of criteria established by SACS.

Access – Ensuring equal opportunity for education, most often addressed with underrepresented students and students with disabilities.

Accommodations – Disability Services counselors meet with qualified students to determine and provide reasonable and appropriate accommodations that support the student's educational goals. (www.ds.uncc.edu)

ACT – A test published by **A**merican **C**ollege **T**esting which measures a student's aptitude in mathematical and verbal comprehension and problem solving. Many colleges and universities, including UNC Charlotte, require students to take this test and submit their test scores when they apply for admission. While UNC Charlotte accepts the ACT, the SAT is preferred. Most students take the ACT or the SAT during their junior or senior year of high school.

Adds/drops – Refers to changes of registration in which a student enrolls or stops enrollment in a course.

Adjunct faculty – Part-time faculty member.

Admissions counselor – A person working in the college Admissions Office who assists perspective students with the preparation of application materials.

Advanced placement – A waiver of some of the courses normally required for an undergraduate degree, granted to a student based on a student's prior study or experience (usually indicated by the student's performance on a special examination).

Advisor – A department or college-based faculty or staff member who meets with students each semester to discuss curricular choices and progress toward achieving educational goals.

Alma mater – The school from which one has graduated, as in "My alma mater is The University of North Carolina at Charlotte."

Alumna/Alumnus (Alumni) – A female/male (group) who attended or graduated from a particular school.

Annotated bibliography – An annotated bibliography is a list of citations to books, articles, and documents followed by a brief descriptive paragraph. The purpose of the annotation or description is to inform the reader of the relevance, accuracy, and quality of the sources cited.

Articulation agreement – A written agreement listing courses at one educational institution that are equivalent to courses at another educational institution. These agreements facilitate the smooth transition of students through the secondary, community college, and university educational systems.

Assessment – The act of evaluation or appraisal.

Assignment – Required reading and course work to be completed outside of the classroom as determined by instructors. Many instructors list assignments on a syllabus, which is distributed at the beginning of the semester. Other instructors give assignments during class.

Associate's degree – A degree traditionally awarded by community or junior colleges after two years of study, or completion of 60 to 64 semester hours.

Audit – Enrolling in a course on an audit basis means the course would not count for credit or GPA. In some cases, the audit fee is less than the tuition rate. Registration for audit may require the permission of the instructor.

Auditory learner – Learns through listening; these students learn best through verbal lectures, discussions, talking things through, and listening to what others have to say. Auditory learners interpret the underlying meanings of speech through listening to tone of voice, pitch, speed and other nuances. Written information may have little meaning until it is heard. These learners often benefit from reading text aloud.

-B-

B.A. or B.S. – B.A. stands for "Bachelor of Arts", and B.S. stands for "Bachelor of Science." These degrees usually take four years to complete.

Bachelor's degree or baccalaureate – The degree of bachelor of arts (B.A.) or bachelor of science (B.S.), typically requiring 120 hours of specified course work. A bachelor's degree is comprised of general education courses, a major, elective courses, and, in some cases, a minor.

Blue book – A booklet with a blue cover that contains lined paper for writing essay test answers.

-C-

Campus – The area where the main buildings of UNC Charlotte are located.

Cashier – The office (or person) where fees/tuition are paid in the Reese Building.

Catalog – A resource of all academic policies and procedures, college and degree requirements, faculty, and course descriptions.

Catalog years– The years during which the regulations of a specific edition of the

Undergraduate Catalog apply. UNC Charlotte updates its catalogs every two years.

Certificate programs – Programs that offer short-term education and/or training in a wide variety of areas.

Chancellor – The chief administrative officer of UNC Charlotte. At some universities, this position is referred to as *president*. To date, UNC Charlotte has had four chancellors. (www.administration.uncc.edu/chancellor)

Chancellor's List – The top honors list which recognizes undergraduate students with outstanding records of academic performance (a GPA of 3.8 or greater) and who meet all other criteria. For details, see the Academic Regulations section of this *Catalog*.

Class standing – This refers to the student's official year in school - Freshman, Sophomore, Junior, or Senior – and is based on the number of college credits completed.

Classification – Level of progress toward a degree based on the number of semester hours passed.

College – An academic unit of the University. Each of the seven colleges at UNC Charlotte represents an organization of related departments.

Colloquium – A gathering of scholars to discuss a given topic over a period of a few hours to a few days.

Commencement *(also known as Graduation)* – A formal ceremony in which the University awards degrees to graduating students at the end of each semester.

Commencement Marshals – At each commencement ceremony, the University honors the juniors with the highest grade point averages by inviting them to serve as the marshals who lead the processions of graduates, faculty members, and the platform party.

Community college – A two-year traditional school, offering programs leading to the Associate's degree and, typically, many noncredit courses in arts, crafts, and vocational fields for community members not seeking a degree. Also called *junior college*.

Concentration – A focus within a major. For example, Public Relations is a concentration of the Communications Studies major.

Contact hours – The number of hours the class meets per week.

Continuing education course – A course outside the regular academic instructional program, for which standard academic fees and tuition are (usually) not charged. While most often these courses do not earn academic credits, they can provide necessary education or experience for professional development, or lead to professional certifications.

Convocation – A gathering of senior administration, faculty, administrative staff, and students to hear statements about the major long-term goals and values of the campus, as well as the major immediate plans and issues confronting UNC Charlotte for the upcoming year, as perceived by the Chancellor, the Provost, and the Faculty President. It is hoped that these presentations will help build a greater shared understanding of the mission of the University and the challenges confronting it. The Convocation is held at the beginning of the academic year. (www.provost.uncc.edu/Convocation)

Core courses – Courses that all students in a major program are required to take.

Corequisite – Specific conditions, requirements, or courses that must be completed while taking another course.

Course – A specific subject studied within a limited period of time. Courses may utilize lectures, discussion, laboratory, seminar, workshop, studio, independent study, internship, or other similar teaching formats to facilitate learning.

Course load – Number of credit hours for which a student is enrolled during a semester.

Course number – The four-letter and four-digit identification code that identifies each course taught at the University, such as ENGL 2126.

Course overload – Defined by most colleges as over 18 credits for undergraduates. Graduate school overload is usually over 12 credits. Approval is required to take an overload.

Course sections – Course numbers may be divided when classes also meet in discussion sections, or when a course number has sections pertaining to different topics under the same heading. For instance, a course called Architecture Topical Studio may have section 001 – Cycloramic Models and section 002 – Building Envelopes.

Course title – The name of a specific course that indicates subject and content. *Introduction to Creative Writing* is the course title of ENGL 2126.

Credit – A credit is the value assigned to a course. Usually one credit equals one 60-minute class

period per week. Many courses carry 3 credits and meet for three hours a week.

Credit course – A course with specified learning goals which the student is required to meet in order to pass the course. The course may be applied toward the fulfillment of degree requirements at the University.

Credit hours – The numerical unit of credit earned for satisfactory completion of a particular course. Each credit hour is roughly equivalent to one hour of class time per week. Most lecture courses are three credit hours. Laboratories do not generally reflect credit hours equivalent to the number of hours they meet.

Critical thinking – The practice of thinking things through, in which a student must carefully describe something (an event, a book, a person, etc) and evaluate it according to some relevant criterion, considering significant alternatives.

Cum Laude – Honorary recognition of the success of a graduating student. Translates to "With Honor." For UNC Charlotte, it requires a cumulative GPA of at least 3.4, but less than 3.8.

Curriculum – A program of courses that meets the requirements for a degree in a particular field of study.

-D-

Dean – The highest authority within an academic division of study. An Academic Dean heads each College. In addition to the academic deans, there is also a Dean of Students within the Division of Student Affairs.

Dean's list – An honors list which recognizes undergraduate students who earn a grade point average of at least 3.4 and not more than 3.79 and meet all other criteria. For details, see the Academic Regulations section of this *Catalog*.

Deferment – The postponing of a fee or tuition, which will be paid at a later date.

Degree – Diploma or title awarded to a student who completed a prescribed course of study.

Degree program – An organized sequence of classes that leads to the awarding of a college degree at the undergraduate or graduate level.

Degree requirement – A set of requirements, which a student must fulfill before he/she graduates.

Department – A unit within a college representing a discipline. For example, the Department of English is in the College of Arts and Sciences.

Department chair – The faculty member in charge of an academic department of the university.

Disability – The physical and/or learning challenge -- permanent or temporary – of a student that may impact their academic plan. Accommodations are provided for students with documented disabilities.

Discipline – An area of study representing a branch of knowledge, such as psychology.

Distance education/learning – Formal learning which occurs when students and instructor are separated by geographic distance or by time. Access to the instructor is gained through communications technology such as the Internet, interactive videoconferencing, TV, and email.

Dissertation – The major research project normally required as part of the work for a doctoral degree. Dissertations are expected to make a new and creative contribution to the field of study, or to demonstrate one's excellence in the field.

Doctoral degree – The most advanced degree, awarded following of additional study, often after completion of a master's degree.

Double major – Studying simultaneously for two degrees in two majors, fulfilling the course requirements for both majors.

Drop/add – A designated time period at the beginning of each semester when a student may add or drop a course.

-E-

Early registration – Students complete a final course selection and make a payment or deposit for tuition and fees in advance of the general student population.

Elective – Courses selected at a student's discretion. The course is not required in the major field of study, but may be used for credit toward a degree. Directed electives are partially restricted (selected from a specified group of courses identified to fulfill a particular requirement). Free electives are selected from any courses for which the student has proper prerequisites.

Emeritus faculty – A member of the faculty who has retired but retains the honorary title that corresponds with his/her last held position at the University.

Equivalency examination – An examination designed to demonstrate knowledge in a subject where the learning was acquired outside a traditional classroom. For example, a student who learned management skills while working at a restaurant could take an equivalency exam to earn credit in small business management.

Essay – A method of examination, or homework, by which a student presents his/her knowledge of the subject by writing a composition.

Experiential learning – Actively engaging students in a work and/or educational experience where they may make their own discoveries and experiment with knowledge themselves, instead of hearing or reading about the experiences of others.

Extracurricular activities – Activities pertinent to student life, but not part of the regular classroom study (e.g., athletics, publications, and social organizations). Also referred to as *co-curricular activities*.

-F-

Facilitator – The person in an interactive videoconferencing classroom who assists the instructor or students with technical and troubleshooting issues, distribution of handouts, collection of tests and evaluations, etc.

Faculty – The members of the teaching staff of UNC Charlotte. Faculty may hold the rank of professor, associate professor, assistant professor, instructor, lecturer, research associate, research assistant, or the equivalent of any of these academic ranks.

FAFSA (**F**ree **A**pplication for **F**ederal **S**tudent **A**id) – A form that all students applying for financial assistance are required to complete in order to determine eligibility for financial aid. This form is available from Student Financial Aid.

FAQ – **F**requently **A**sked **Q**uestions. On the Internet and in print, information sources may provide a list of FAQs to assist newcomers in learning more on their own.

Fees – An amount of money charged by institutions (in addition to tuition) to cover costs of certain services (health services, athletic center, registration, parking, and for the use of lab equipment or computers, etc.).

FERPA – The **F**amily **E**ducational **R**ights and **P**rivacy **A**ct (FERPA) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

Final exam – The last, and often the most comprehensive, examination of the entire semester's class material. The schedule for final exams is listed on www.registrar.uncc.edu under Calendars.

Financial aid/assistance – Money available from various sources to help students pay for college. Students must establish eligibility. Funds can be competitive.

Financial aid package – Total amount of financial aid given to a student. Federal and non-Federal aid such as grants, loans, and work-study are combined to help meet the student's need.

Financial need – In the context of student financial aid, financial need is equal to the cost of education (estimated costs for college attendance and basic living expenses) minus the expected family contribution (the amount a student's family is expected to pay, which varies according to the family's financial resources).

Fraternity – A social organization, most often for male students, with specific objectives, rules and regulations.

Full-time student – A student with a full course load, usually 15 credit hours per semester (a minimum of 12 credit hours to be eligible for federal financial aid).

-G-

General Education Requirements- These courses provide undergraduate students, regardless of their majors, with the foundations of a liberal education. The program is designed to help students develop the foundational skills necessary for obtaining the full benefits of a college education: basic college-level writing and communication skills, basic use of information technology, and basic college-level mathematical and logical skills.

GPA (**G**rade **P**oint **A**verage) – A system of recording academic achievement based on an average of a student's grades. The student's semester GPA is an average of grade points earned during that semester, ranging from 0.0 to 4.0. Cumulative GPA is an average of all grade points earned in a certain degree program or university.

Grades – Evaluative scores provided for each course, and often for individual examinations or papers written for that course. There are letter grades (usually A, B, C, D, F) and number grades (usually percentages from 0% to 100%), or on a scale of 0.0 to 4.0. Some courses use a pass/no credit system with no grades.

Graduate studies – Coursework beyond the bachelor's degree that leads to a master's degree, professional or doctoral degree.

Graduation *(also known as Commencement)* – A formal ceremony in which the University awards degrees to graduating students at the end of each semester.

Graduation with Distinction – Graduating with honors. To be eligible to graduate with distinction, a student must have a certain grade point average computed on at least 48 semester hours of credit completed in residence at UNC Charlotte. *(See Summa Cum Laude, Magna Cum Laude, and Cum Laude)*

Grant – A sum of money given to a student for the purposes of paying at least part of the cost of college. A grant does not have to be repaid.

-H-

Hold Flags – *See Registration hold flags.*

Honors – A special rank or distinction conferred by the university upon a student for excellence in scholarship (based on their GPA). For details, see the Academic Regulations section of this *Catalog.* When referring to a course of study, an honors course is for academically talented, enthusiastic, and motivated students.

-I-

Incomplete grade – An "I" (incomplete grade) may be reported for a student who carried coursework satisfactorily until near the end of the semester, but who is then unable to complete the course, possibly including the final exam. If the student does not remove the "I" within 12 months, the "I" will be changed to "F," "U," or "N," as appropriate. See the Academic Regulations section of this *Catalog* for complete details.

Independent study – A method of receiving credit for study or research independent of the assignments of any specific course, but supervised and graded by a faculty member.

Interdisciplinary – Course or program of study involving two or more major areas/departments. For example, International Studies is an interdisciplinary program offering both a major and a minor within the College of Arts and Sciences.

Internet course – Web-based course completed online. Also called an *online course.* May or may not be self-paced.

Internships – Internships provide students with opportunities for experience in a wide range of work-place settings.

Intramural/fitness/sport clubs – Programs designed to encourage students to participate in a variety of competitive, instructional, and recreational organized sports activities.

-J-

Job fair – Also known as a *career fair* or *career expo*, it provides a place for employers and recruiters to meet with student job seekers, typically for entry-level positions. Fairs usually include company or organization tables or booths where résumés may be collected. Occasionally, it is also where students may perform their first interviews with a prospective employer.

-L-

Laboratory (lab) – A classroom where students apply lecture material in small-group situations that include experiments, assignments, and projects. A lab course typically has an "L" after the course number.

Learning communities – Small groups of students and faculty who work closely together creating a "community of learners."

Learning strategies – Activities that help people use their own learning style to best approach new learning.

Learning style – The way a person takes in, understands, expresses and remembers information; the way a person learns best. *See auditory, kinesthetic, and visual learning.*

Lecture – A teaching method in which the professor presents information to the students who take notes, ask questions, and have dialogue with the professor.

Loan – A type of financial aid that is available to students. An education loan must be repaid. In many cases, payments do not begin until the student finishes school.

Lower division course – A course that is intended for freshman and sophomore level students (typically 1000 and 2000 course numbers) that contains introductory content.

-M-

Magna Cum Laude – High honorary recognition of the success of a graduating student. Translates to

"With Great Honor." For UNC Charlotte, it requires a cumulative GPA of at least 3.8, but less than 4.0.

Major – The subject or area of study in which a student concentrates. See the Program Degrees section of this *Catalog* for a listing of available majors.

M.A./M.S. – Master of Arts/Master of Science awarded upon completion of a one or two year program of graduate study.

Master's degree – An advanced degree awarded by a university after completion of studies beyond a bachelor's degree.

Matriculated student – A matriculated student has been accepted for admission to the educational institution, has registered in a curriculum and is pursuing courses toward a degree or certificate. (See also *Non-matriculated student)*

Matriculation – The first enrollment following admission as a student.

Mid-term exam– An (often major) examination given in the middle of the semester that tests the student's knowledge of information taught in the course from the beginning of the course up until the time of examination.

Minor – The secondary field of study requiring fewer credits than the major. See the Program Degrees section of this *Catalog* for a listing of available minors.

Multiple-choice examination – An examination in which questions are followed by two or more answers, from which a student selects the correct answer.

-N-

Niner Nation – The collective UNC Charlotte student body.

Noble Niner – The honor code created by the Student Government Association which solidifies the high standard of morals, principles, and integrity that all students should strive to uphold to bolster the growing reputation of excellence at UNC Charlotte.

Non-credit course – A class that typically meets only once or just a few times and that contributes toward personal or occupational development rather than being applicable toward a college degree.

Non-matriculated student – A non-matriculated student is one who has not yet been accepted for admission to the college, has lost matriculated status by not enrolling in coursework for one semester, or has been suspended from a program because of failure to maintain good academic standing. (see also *Matriculated student)*

-O-

Objective test – An examination in which questions requiring a very short answer are posed. It can be multiple choice, true/false, fill-in-the-blank, etc. The questions are related to facts (thus objective) rather than to opinions (or subjective).

Online courses – Courses which are taught and taken over the Internet.

Open-book examination – A student is permitted to use his/her textbook and classroom notes during the exam.

Oral examination – A student answers questions by speaking rather than by writing.

Orientation – A organized gathering, held at the beginning of every semester, that provides useful information to new students to acclimate them with the college campus and student life.

-P-

Part-time student – A student who carries less than a full load of courses. See also *Full-time student.*

Pass/no credit course – A course that rates a student's performance on a pass/no credit basis, rather than on grades.

Ph.D. – The highest academic degree awarded by a university to students who have completed studies beyond the bachelor's and/or master's degrees, and who have demonstrated their academic ability in oral and written examinations and through original research presented in the form of a dissertation (thesis). Also called a *doctoral degree.*

Placement test – An examination used to test a student's academic ability in a certain subject so he/she can be placed in a course at an appropriate level. In some cases, students may get course credits after scoring high on a placement test.

Plagiarism – Passing off someone else's work as your own or using the intellectual property of someone else without giving proper credit. Students must follow certain guidelines to properly acknowledge the use of other people's ideas or words in their work (unless such information is recognized as common knowledge). This is considered a serious offense at every institution,

and is subject to disciplinary action that may include failure in a course and/or dismissal from the University.

Pop-quiz – A quiz that the instructor has not previously informed the students about.

Postsecondary education – Refers to all education for students after high school, including programs at community colleges, technical colleges, and four-year colleges and universities.

Prerequisites – Specific conditions, requirements, or courses that must be completed before enrolling in another course. Course prerequisites (if any) can be found within each course description. For example, Spanish I is a prerequisite for Spanish II.

Proctor – A person who supervises the taking of an examination to be certain there is no cheating, and that other rules are followed.

Professional development courses – Courses offered to improve knowledge and skills in a specific professional areas, such as professional certification programs. Usually not offered for academic credit.

Provost – Reporting to the Chancellor, the Provost is the chief academic officer who oversees all academic affairs and activities, including research and faculty. The Deans of each College report to the Provost.

-Q-

Quiz – A short test, written or oral, usually less formal and carries less grade weight than an exam.

-R-

Readmission – Approval of the enrollment or admission of a former student.

Reassignment of Duties – A period of time (usually one semester) when a faculty member is not teaching, but concentrating on his/her own education or research.

Registrar – The official at the University who is responsible for maintaining student records. The Office of the Registrar plans and oversees registration, academic record maintenance, transcript preparation, graduation, a degree audit report system, and curricular records.

Registration – Students complete a final course selection and make a payment or deposit for tuition and fees.

Registration hold flags - Students may be blocked from registering for courses by "hold flags" that may be placed for various reasons, including College or departmental advising requirements, invalid admissions status, outstanding financial obligations, unreturned equipment or library materials, suspension and disciplinary action, or non-compliance with the North Carolina Immunization Law.

Required courses – Courses that a student must take in order to complete his/her degree. In many cases, these courses must be passed with a grade C or better.

Research paper – A formal written report that includes research findings and a student's own ideas.

ROTC – **R**eserve **O**fficers **T**raining **C**orps program; a scholarship program wherein the military covers the cost of tuition, fees and textbooks and also provides a monthly allowance. Scholarship recipients participate in summer training while in college and fulfill a military service commitment after college.

-S-

SAT – **S**cholastic **A**ptitude **T**est that measures a student's aptitude in mathematical and verbal comprehension and problem solving. Many colleges and universities, including UNC Charlotte, require students to take this test and submit their test scores when they apply for admission. UNC Charlotte also accepts the ACT, but the SAT is preferred. Most students take the SAT or the ACT during their junior or senior year of high school.

Schedule of classes – This list is issued online at www.registrar.uncc.edu prior to each semester and lists available course numbers, hours, locations, and other pertinent information.

Scholarship – A sum of money given to a student for the purposes of paying at least part of the cost of college. Scholarships can be awarded to students based on academic achievements, financial need, or on many other factors. Scholarships and grants do not have to be repaid.

Section – One of several classes of the same course. At UNC Charlotte, a three-digit code is used to identify each section of each course offered. For instance, a course called Architecture Topical Studio may have section 001 – Cycloramic Models and section 002 – Building Envelopes.

Self-directed learning – A process in which students take the initiative to diagnose their learning needs, formulate learning goals, identify resources for learning, select and implement learning strategies,

and evaluate learning outcomes. The instructor is available as a guide.

Semester or Term – A period of study of approximately 16 weeks, usually half of the academic year (i.e., fall and spring semesters). The fall semester begins in August and the spring semester begins in January at UNC Charlotte. There are summer sessions as well.

Seminar – Most commonly offered as upper-level and graduate courses, these are small classes of approximately 15 students each, designed to facilitate intensive study of specific subject areas.

Sorority – A social organization for female students, with specific objectives, rules and regulations.

Study abroad – Visiting other countries for educational purposes, including earning academic credit, learning different cultures, and developing a deeper understanding of the global marketplace.

Subjective test – An examination in which the answers are in the form of narrative sentences or long or short essays, often expressing opinions rather than reporting facts.

Summa Cum Laude – The highest honorary recognition of the success of a graduating student. Translates to "With Highest Honor." For UNC Charlotte, it requires a cumulative GPA of 4.0.

Supplemental Instruction – Additional assistance for students in historically difficult courses, including biology, chemistry, physics, communication studies, engineering, mathematics, and business.

Surveys – To improve the experience for future students, current students are often asked to complete surveys to provide feedback on the quality of services and impact of educational programs.

Syllabus – A course outline typically provided on the first day of class by the instructor that describes course requirements, topics to be covered, required reading, grading criteria, faculty expectations, deadlines, exam dates, class attendance requirements, and other relevant course information.

-T-

Take-home examination – An examination that may be completed at home. Since students may use additional resources; these exams are usually more difficult than in-class exams.

Term paper – A written original work discussing a topic in detail, usually several typed pages in length. Often due at the end of a semester.

Test – An examination, or any other procedure that measures the academic abilities of students.

Track –A separate route leading to the same degree but with different requirements. Also called a *concentration*. For example, a student may earn a B.A. in Communication Studies, but have achieved it through a Health Communication, Mass Media, or Public Relations track.

Transcript – A list of all the courses a student has taken with the grades that the student earned in each course. The University requires a high school transcript when a student applies for admission. Additionally, after earning a college degree, some employers may require a copy of a candidate's university transcript. These can be obtained by the student from the Office of the Registrar (Records and Registration).

Transferability – The extent to which a course taken from one college or university may be accepted by another. Full or partial transfer of the credit may be available, dependent on factors such as whether the receiving college or university offers an equivalent or similar course at comparable levels of academic expectation for learning. Academic advisors have information about whether and how specific courses will transfer to their institutions and degree programs.

Transfer student – A student who has earned credit in one college or university, and then transfers to another.

Transient study – When credit for courses taken by current UNC Charlotte students at other accredited institutions are transferred to UNC Charlotte, subject to approval. For details, see the Academic Regulations section of this *Catalog*.

True/False examination – An examination in which questions are answered by marking "True" or "False."

Tuition – The amount of money that colleges charge for classroom and other instruction. Tuition can vary widely between educational institutions, and does not cover fees, cost of books, and other materials.

Tuition waiver – A form of financial assistance in which the university may charge little or no tuition.

Tutoring – A method of providing help to students by instruction outside of class. Advanced students work with individuals or small groups to increase their understanding of the material.

-U-

Undeclared – A student who has not yet declared a major field of study; sometimes referred to as *undecided*.

Undergraduate studies – A two or four-year program in a college or a university, following high school graduation, which leads to an associate or bachelor's degree.

Upper division course – A course that is intended for junior and senior level students (typically 3000 and 4000 course numbers) that contains advanced, and typically more specific, topic content.

-V-

Visiting faculty – Faculty members who come to the university from another institution for an appointment of a year or less, sometimes to fill a temporary vacancy.

Visual learner – Learns through seeing; these students need to see the instructor's body language and facial expression to fully understand the content of a lesson. They tend to prefer sitting at the front of the classroom to avoid visual obstructions (e.g. people's heads). They may think in pictures and learn best from visual displays including – diagrams, illustrated text books, overhead transparencies, videos, flipcharts and hand-outs. During a lecture or classroom discussion, visual learners often prefer to take detailed notes to absorb the information.

-W-

Withdrawal – The procedure in which a student officially removes himself/herself from taking a course, or from the University. Tuition may or may not be refunded, depending on the date of withdrawal.

Work-study program – A program that allows students to work part-time during the school year as part of their financial aid package. The jobs are usually on campus and the money earned is used to pay tuition or other college expenses.

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Academic Buildings

- 58 Applied Optics & Physics
- 4 Atkins
- 16 Barnard
- 17 Belk Gym
- 38 Burson
- 42 Cameron Applied Research
- 52 College of Education
- 32 Colvard
- 8 Denny
- 57 Engineering Research
- 45 Fretwell
- 35 Friday
- 9 Garinger
- 60 Health & Human Services
- 1 Kennedy
- 2 Macy
- 20 McEniry
- 51 Robinson Hall
- 19 Rowe
- 12 Smith
- 41 Storrs
- 10 Winningham
- 56 Woodward Hall

Services - Places of Interest

General
- 39 Auxiliary Services
- 46 Barnhardt
  - Student Activity Center
  - Halton Arena
- 34 Bookstore
- 18 Brocker Health Center
- 48 Ceto Hall
  - Admissions
- 5 Cone University Center
- 4 Counseling Center
- 23 Facilities Operations & Parking Services
- 55a Facilities Management (new)
- 37 McMillan Greenhouse
- 49 Miltimore-Wallis ATAC
- 55b Police
- 61 Student Health Center (new)

Administration
- 11 King
  - Registrar
- 14 Receiving / Stores
- 36 Reese
  - Student Accounts

Dining Services
- 31 Cafeteria Activities Building
- 34 Prospector
- 29 Residence Dining Hall

Places of Interest
- 15 Alumni House
- 59 Alumni Center (new)
- 13 Belk Tower
- 54 Chancellor's Residence
- 44 Irwin Belk Track Complex
- Susie Harwood Garden
- Van Landingham Glen
- 43 Wachovia Field House

Campus Housing

- 535 Cedar Hall
- 546 Cypress Hall
- 543 Elm Hall
- 538 Hawthorn Hall
- 536 Hickory Hall
- 504 Holshouser Hall
- 505 Hunt Village
- 542 Maple Hall
- 513 Martin Village
- 501 Moore Hall
- 540 Oak Hall
- 524 Phase III
- 541 Pine Hall
- 502 Sanford Hall
- 503 Scott Hall
- 545 Squires Hall
- 537 Sycamore Hall
- 544 Witherspoon Hall

Parking Areas

Resident, Commuter & F/S
- Lot 5
- Lot 5A
- Lot 6
- Lot 8
- Lot 10
- Lot 14
- Lot 17
- Lot 18
- Lot 23
- Lot 25
- Lot 26 (Designated Area)
- Deck G (under construction)

Resident & F/S
- Lot 8A
- Lot 9
- Lot 9A
- Lot 12
- Lot 13
- Lot 16 *
- Lot 20
- Lot 21
- Lot 22
- Lot 24
- Lot MSU

* Note: No F/S in this lot except in marked spaces

Commuter & F/S
- Lot 4 & 4A
- Lot 6A
- Lot 7
- East Deck 2 & 3
- West Deck

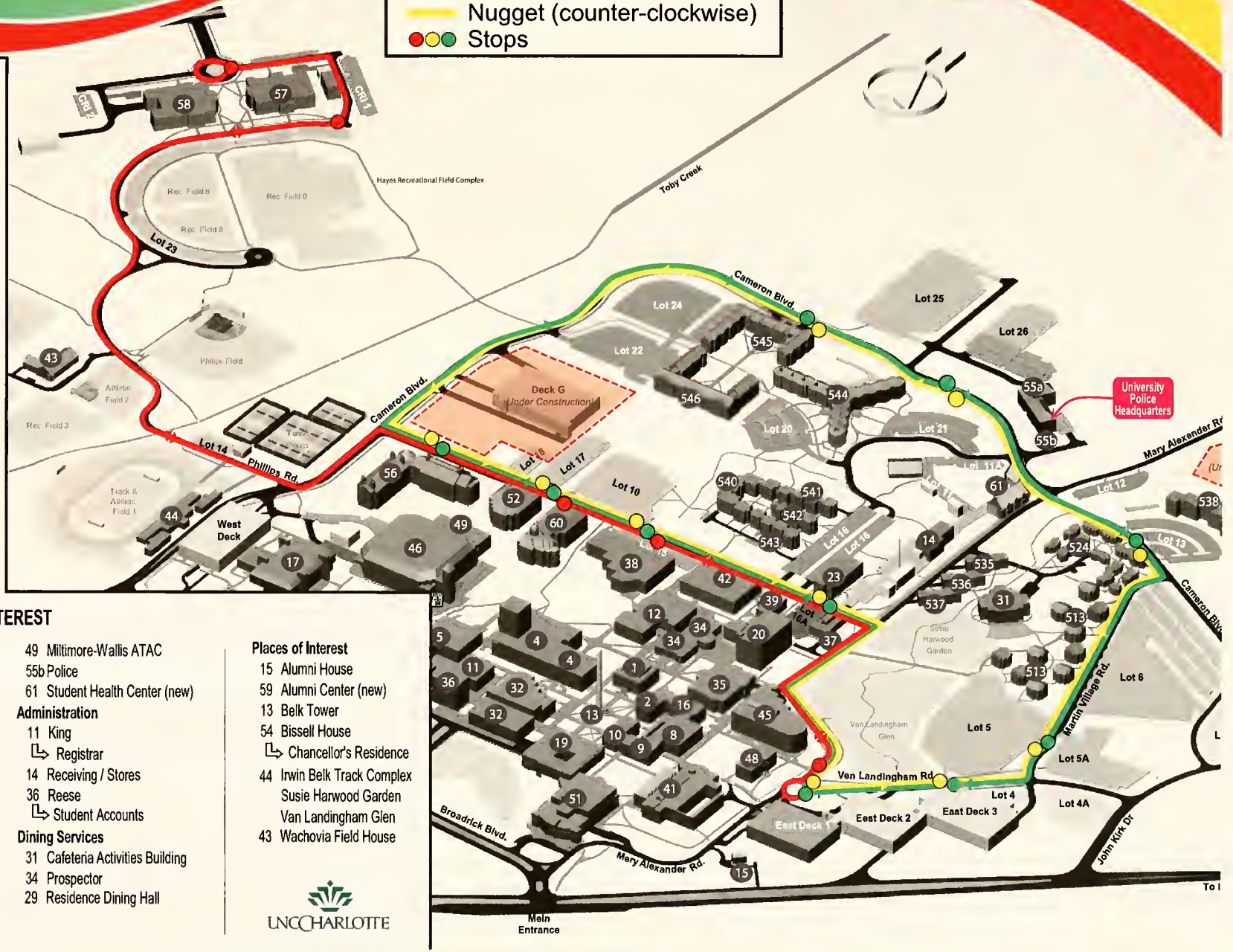
Faculty & Staff
- Lot 11 & 11A
- Lot 15
- Lot 26
- CRI 1 & 2
- Cone Deck 1 & 2
- East Deck 1
- West Deck

- Resident, Commuter & F/S
- Resident & F/S
- Commutar & F/S
- Faculty & Staff
- Disabled Lots
- Disabled Parking
- Meter Parking
- Visitor Parking
- ATM
- CATS Bus Stop Route 29
- Shuttle Bus Stop Route 249

UNC Charlotte Campus Shuttles Service Map

FREE RIDE

- CRI Express Shuttle
- Niner (clockwise)
- Nugget (counter-clockwise)
- Stops



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